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ABSTRACT

Seven research tasks and related projects undertaken by the Center for Language Education and Research (CLEAR) are described in a series of summary reports. For each specific task, an introductory section outlines the background, relevant research, and scope of the task. Subsequent sections contain reports of studies done as part of the task, each written by the project director. The seven tasks (beginning with task 2) include: (1) uncovering new knowledge about improving the academic learning skills of language minority students in the areas of reading, writing, and reasoning skills and as development of those skills relates to the classroom environment; (2) professional development, both preservice and language skills, and language processing in second language learning; (3) the improvement of content of materials, curricula, and programs; (4) the linguistics and metalinguistic underpinnings of academic learning; (5) the scope, structure, and effectiveness of second language instructional programs; (6) second language attrition following immersion and intensive instruction; and (7) relationships between existing models of second language instruction and instruction for language minority students. (MSE)

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Center for Language Education and Research

Conference on Research in Language and Education:

An Agenda for the Future

UCLA Lake Arrowhead Conference Center

January 28 - 31, 1989

Task and Project Summaries

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CLEAR TASKS AND PROJECTS

TASK 2 - ACADEMIC KNOWLEDGE BASE

Task Coordinator: E. Cascallar

2.1 Improving Reading Instruction and Text Comprehension for Language Minority Students . . . . . C. Valadez, A. Padilla

2.2 Reading Achievement among Language Minority Students . . . . . R. Duran

2.3 Dialogue Journals as a Research and Pedagogical Tool with Language Minority Children . . . . . J. K. Peyton

2.4 Improving Reasoning Skills . . . . . R. Duran

2.5 Language and Problem Solving in Secondary School Science Classes . . . . . G. Spanos, J. Crandall

2.8 Processes and Significant Features of Cooperative Learning Programs . . . . . E. Jacob

2.9 The Adjunct Model of Language Instruction for Language Minority University Students . . . . . M. A. Snow, D. Brinton

2.10 School Setting Research on Cognitive/Language Skills . . E. Hatch

A: Written and Spoken Language Differences in Bilingual Elementary School Children

B: Scaffolded Classroom Interaction and its Relation to Second Language Acquisition for Language Minority Students

TASK 3 - PROFESSIONAL DEVELOPMENT

Task Coordinators: C. Valadez & J. Crandall

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Professional Development for the Educator of Language Minority Students (West Coast) . . . . . C. Valadez

3.2 Developing an Information and Support Network of Educators of Language Minority Students . . . . . D. Christian, J. Crandall, G. Spanos

3.3 Helping Pre-Service Teacher Training in Bilingual Education and ESL Credential Programs to Meet the Needs of Teachers in the Field . . . . . C. Valadez

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Task Coordinators: D. Christian & C. Valadez

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TASK 5 - LINGUISTIC AND METALINGUISTIC UNDERPINNINGS OF ACADEMIC LEARNING

Task Coordinator: E. Cascallar

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5.3 Contextualized and Decontextualized Language Skills . . . . . C. Snow

5.4 Question Strategies in a Second Language. . . . . K. Lindholm

5.5 Academic Language Talk: Significant Features in the Responses of L1/L2 "Effective Communicators" . . . . . C. S. Dudgeon

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6.6 Comparison of FLES and Immersion Programs . . . . . N. Rhodes

6.7 Development of Assessment Instruments . . . . . C. Stansfield

6.8 The Effects of Proficiency-Oriented Adaptation of Textbooks and Instructional Practices on Student Foreign Language Learners . . . . . C. Stansfield

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Task Coordinator: C. Stansfield

7.2 Second Language Attrition: A Follow-up of Spanish Immersion Graduates . . . . . M. A. Snow

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Task Coordinator: R. Campbell

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8.3.2 Existing Bilingual Immersion Programs at the Secondary Level . . . . . E. Cascallar

8.3.3 Existing Bilingual Immersion Programs at the Elementary Level . . . . . K. Lindholm

8.4 Implementation and Evaluation of New Bilingual Immersion Programs . . . . . J. Galvan

TASK TWO

Task Two Summary

Task Introduction

Research on the academic learning skills of language minority students were organized into five sub-areas: reading, writing, cognitive skills, effective school practices and professional development of teachers. The research focused on uncovering new knowledge about how to accelerate the development of academic skills among language minority students based on recent research in the areas of cognitive psychology, discourse analysis and ethnography of communication, bilingualism, and second language learning. This research is distinguished from research on the linguistic and metalinguistic underpinnings of academic learning in that it asks "how can we improve the academic aptitudes of language minority students in English given their existing language proficiency characteristics in English and another language."

However, there is a natural overlap in some of the questions of research across the academic learning and linguistic underpinnings of academic learning areas of research. Studies in both areas have taken into account how students' knowledge of two language systems affects their ability to perform academic tasks. This overlap means that studies in the academic learning area have a practical connection to research on the linguistic and metalinguistic underpinnings of academic learning. The initial orientation phase served to identify the overlapping research questions more precisely and coordinate closely the proposed research efforts, both among the studies contained in this task, and between this task and Task 5.

Research at the Center on the academic learning skills of language minority students shared a number of important theoretical themes across the five areas of investigation. There is a shared belief that students' learning and thinking in higher order academic tasks are meaningful and critical to school success. They emphasize the role of the context in which learning and thinking occur. Concern with context naturally led to our emphasis on the investigation of students' and teachers' interaction and students' ability to profit from instruction. Thus, the studies aimed at improving the professional development of the teachers of language minority students also included the results of these investigations.

Another important characteristic of the research is that it pursued the development of academic thinking skills in students by systematically building upon their existing skills. Further, instead of focusing on remediation of isolated skills, attention was given to training students to appreciate the nature and purpose of academic tasks. Every study examined the potential for the development of cognitive-academic skills in a manner which enhanced students' ability to monitor and reflect upon their own thinking processes. Specific skills in language understanding and language production were viewed as instruments of thought and purposeful communication.

Reading Research. Research in reading investigated language minority students' ability to understand written material requiring high level comprehension and information integration skills.

Valadez and Padilla examined how reading instruction and text comprehension can be improved for language minority students. Valadez and Padilla proposed a three-part study to address this need,

culminating in the development of a prototype reading instruction program for language minority students. The program was to be implemented in selected classrooms and its effects were to be assessed in comparison to the effects of a control group of teachers using traditional reading curricula. Finally, the researchers used the experience of the evaluation period to refine the approach into a prototype reading instruction program for use with kindergarten and elementary school level language minority students.

In another study addressing reading, Duran reviewed recent cognitive science research on reading comprehension. The results of this review are summarized in the draft CLEAR Educational Report Improvement Assessment of the Reading Comprehension Skills of Language Minority Students. The second phase of the project involved development and administration of innovative clinical methods for assessing high-level reading comprehension skills of students based on the finding of the literature review. These methods are described in the draft CLEAR Technical Report Methods for Assessing Comprehension Skills of Language Minority Students. The innovative assessment methods were administered to eleven entering eighth grade Hispanic students. The clinical assessment focused on students' strategies in: (1) global interpretation of passage meaning, (2) understanding the meaning of a passage based on its genre (3) understanding the meaning of individual words and phrases, (4) understanding a passage in light of relevant cultural and experiential background knowledge, and (5) recognizing the function and meaning of grammatical and rhetorical features in a passage. In addition, attention was also given to students' strategies in answering multiple-choice questions based on a

passage. The findings of the project are summarized in the draft CLEAR Final Report Reading Achievement Among Language Minority Students.

Writing Research. Research in this area emphasized language minority children's development of critical thinking skills in response to the cognitive and social-communicative demands of writing tasks. In the main study, Kreeft investigated the use of dialogue journals as a tool for training thinking and literacy skills among language minority children. Academic thinking is seen to begin in the students' ability to understand, monitor, and control the social and referential purposes of written communication. The dialogue journal technique involves having students carry on a written conversation with a teacher over an extended period of time. Earlier investigations of journal use suggest that students' ability to think critically through writing is stimulated and shaped by the socially supportive relationship established between the teacher and student (Staton, et al., 1982; Kreeft, et al., 1984). The current work is theoretically motivated by research suggesting that children can internalize new thinking skills by a process of self-reflection which is stimulated by a teacher's ability to orient and guide children in their self expression and performance of academic tasks (McNamee, 1979; Cazden, 1979). Kreeft examined how language minority children's dialogue journals differ from those of non-language minority children and how the writing and thinking skills of language minority children might be stimulated. She analyzed existing data from two 6th grade classes (one consisting of non-native English speakers and the other of native speakers) and collected and analyzed new data from a group of older and younger children. The analyses focused on children's writing

development as reflected by characteristics such as organization, clarity of expression, topic-specific elaboration, substantiation of assertions, audience awareness, and decontextualized style of the children's writing. The correspondence of these features of writing to the teachers' own writing strategies were examined. An important portion of the research involved teacher-researcher collaboration in looking at the teachers' writing practices and teacher training activities.

Cognitive Skills Research. Research in this area investigated the assessment and acquisition of critical reasoning skills and the learning of scientific and mathematical concepts. Duran investigated language minority Hispanic college students' ability to make valid versus invalid inferences from academic texts. He also developed cognitive training exercises which aid students in detecting and eliminating the use of invalid inferences. Cognitive and applied linguistics research (Hildyard & Olson, 1978; Collins, 1977; Halliday & Hassan, 1979) and Duran's (1983, 1985) own research on Hispanics' college admissions test performance suggest that both knowledge of English and of appropriate forms of reasoning can influence students' inferences. Students were administered via a microcomputer a set of inference tasks which measured their ability to avoid reasoning fallacies; students were asked to generate think-aloud protocols describing their perceptions of problems and the bases of their inferences. The protocols were examined to determine whether comprehension of logical terms of conjunction or other linguistic and cognitive factors influenced the students' appropriate and inappropriate judgments. The subsequent phase of research developed

computer-delivered exercises intended to help students interpret the language and reasoning demands of inference problems.

In another study, Spanos and Crandall's goal was to develop teaching guidelines, techniques and interactive materials designed to facilitate the acquisition of English language and problem-solving skills for secondary school, language minority science students. the strategies and materials are based on information collected from a number of sources, including interviews, questionnaires and problem-solving sessions with students from various language backgrounds, classroom observations in eighth and tenth grade science classes, and a topic analysis of commonly used texts. Two sets of materials were produced, each consisting of interactive problem-solving activities and a glossary. One set of materials is geared to the central concepts taught in junior high school physical science classes. The glossary for this set is divided into sections which reflect the different types of vocabulary students are expected to master, e.g., laws, processes, and laboratory equipment. Each section is followed by a set of questions which tests mastery of the vocabulary. The interactive problem-solving activities for this set provide paired-practice on key concepts, e.g., measurement, sound, force, and gravity. Drafts of these materials were completed in August, 1987, and they will be field tested during the 1987-88 school year in Arlington County, VA Public Schools.

The second set of materials, geared to high school biology courses was modeled on the physical science format. They were developed during 1987-88 and field tested the following year. The entire project will be completed by June 1989, at which time project staff will disseminate

the final materials and teaching guidelines through workshops, reports and presentations.

Information is also being collected on differences between various ethnolinguistic groups engaged in problem-solving activities. In particular, project staff are interested in a possible relationship between language learning and the development of memorization strategies which might transfer to learning tasks in the areas of math and science.

Effective School Practices. Research in this area concerns background and schooling factors that affect academic achievement in various ethnolinguistic groups, the significant features of successful cooperative learning programs for language minority children, and the effectiveness of academic/language programs developed for incoming undergraduate college students from non-English backgrounds. The conception and design of these studies builds on recent research on effective school practices and other factors affecting academic achievement.

Jacob proposed, as an approach to program design, the use of cooperative learning techniques which emphasize learning in small groups. Jacob cites research suggesting that children's development of high level academic skills is stimulated by such techniques. She also points out that research involving cooperative learning and language minority children is rare. Erickson and Mohatt (1982), Philips (1983), and Au (1980), suggested that cooperative learning tailored to the children's social and cultural background may be especially productive for this group.

Snow, in another study of an innovative program design, investigated the success of a freshman summer program for entering undergraduate language minority students at UCLA. The program, primarily intended for foreign students, combines instruction in English as a second language with instruction in core undergraduate courses. The goal of the program was to strengthen the students' use of English for academic purposes and their study skills. Snow evaluated the program's effectiveness by assessing the students' success in college. Consequently, profiles describing the language proficiency characteristics and academic development of program graduates were developed.

Professional Development of Teachers. Research in this area was intended to acquaint teachers with advances in cognitive science and with sociolinguistic approaches to instruction. The two studies proposed were unique in that they involved teachers and tutors as active participants in research. Both studies were proposed by Hatch and a team of collaborators. In the first study, a small group of elementary school bilingual program teachers worked with members of the Center staff to identify important thinking, language and cognitive skills which students must acquire in order to perform classroom tasks.

List of Projects

Task Coordinator: Eduardo C. Cascallar

Project	Study	Project Director(s)
2.1	The Relationship Between Reading Instructional Practices and Text Comprehension in Language Minority Students	Concepcion Valadez
2.2	Reading Achievement Among Language Language Minority Students	Richard Duran
2.3	Dialogue Journals as a Research and Pedagogical Tool with Language Minority Students	Joy Kreeft
2.4	Improving Reasoning Skills	Richard Duran
2.5	Problem-Solving by Minority Students in Math and Science Classes	George Spanos JoAnn Crandall
2.8	Processes and Significant Features of Cooperative Learning Programs	Evelyn Jacob
2.9	The Adjunct Model of Language Instruction for Language Minority College Students	Ann Snow
2.10	School Setting Research on Cognitive/Language	Evelyn Hatch

Project Title: *Improving Reading Instruction and Text Comprehension for Language Minority Students* (2.1)

Project Directors: Concepcion M. Valadez and Amado M. Padilla

Description: *This study is examining the transition between first language and second language English instruction with particular attention to reading. The study, which is being conducted in collaboration with a large urban school district, has three strands. The first is a longitudinal examination of academic progress primarily in reading of two grade cohorts (1st and 4th grade) of students at three elementary schools with large enrollments of limited English proficient (LEP) students, but differing in selected school characteristics. This study has been conducted in two waves of data collection 12 months apart, involving 1,162 students in the first wave and data on 900 of the original students in the second wave. The second study involves a cohort of 90 entering kindergarten children in 1986 who we have continued to track for 12 months. These students consisted of 30 Spanish/English bilinguals, 30 English and 30 Spanish monolinguals at school entrance. The students were administered a battery of cognitive and reading aptitude tests at the beginning and end of kindergarten. In addition, home literacy measures were obtained from the parents of these children. The third study consists of interviews with reading specialists, classroom teachers and school administrators regarding the implementation of a reading curriculum for limited English proficient students who began reading instruction in Spanish and then made the transition to reading instruction in English. The interviews are supplemented by classroom observations during reading instruction periods. The intent of this study is to understand the implementation of a reading program for LEP students and then to capitalize on this program in the design of a prototype reading program for broad dissemination. All three studies are interconnected in the focus that they bring to the process of reading instruction and transfer from L1 to L2 reading. The longitudinal study provides a large scale data base on the achievement level of LEP students by learner and instructional characteristics and also allows for comparisons with English-only student achievement. The second study allows us to assess home, student, and instructional features of schooling during the kindergarten year. The final component of this project is concerned with the process of reading instruction and actual program implementation for LEP students.*

Project Title: Reading Achievement Among Language Minority Students (2.2)

Project Director: Richard Duran

Description: The first phase of this one-year project involved a review of recent cognitive science research on reading comprehension. The results of this review are summarized in the draft CLEAR Education Report Improvement Assessment of the Reading Comprehension Skills of Language Minority Students. The second phase of the project involved development and administration of innovative clinical methods for assessing high-level reading comprehension skills of students based on the finding of the literature review. These methods are described in the draft CLEAR Technical Report Methods for Assessing Comprehension Skills of Language Minority Students. The innovative assessment methods were administered to eleven entering eighth grade Hispanic students. The clinical assessment focused on students' strategies in: (1) global interpretation of passage meaning, (2) understanding the meaning of a passage based on its genre, (3) understanding the meaning of individual words and phrases, (4) understanding a passage in light of relevant cultural and experiental background knowledge, and (5) recognizing the function and meaning of grammatical and rhetorical features in a passage. In addition, attention was also given to students' strategies in answering multiple-choice questions based on a passage. The findings of the project are summarized in the draft CLEAR Final Report Reading Achievement Among Language Minority Students.

Project 2.3: Dialogue Journal Writing as a Research and Pedagogical Tool with Limited English Proficient Students

Project Director: Joy Kreeft Peyton

Status: Terminated, end of Year 3

Rationale

In recent years, the use of interactive writing has emerged as an approach for motivating students to write and for giving them an interactive context in which they can work out their thoughts in writing with a more proficient writer as a partner. Uses of interactive writing have taken the form of letters (Heath & Branscombe, 1984), electronic mail messages (Levin, Riel, Rowe, & Boruta, 1984), and classroom conversations on local area networks (Peyton & Batson, 1986).

Dialogue journals, regularly occurring written interactions between students and a teacher in a bound notebook or on a computer disk, are another form of interactive writing. The results of two previous studies of dialogue journal writing, with native English speakers (Staton, Shuy, Peyton, & Reed, 1988) and nonnative English speakers (Kreeft, Shuy, Staton, Reed, & Morroy, 1984) have indicated that they hold substantial benefits for limited English proficient (LEP) students--they provide a personalized, non-threatening atmosphere in which students can express themselves in writing about topics of their choice with their teacher, who gives supportive written feedback, roughly approximating their level of English proficiency; the reading and writing in which students engage in their dialogue journals can help them to perform other academic tasks. As a result of these findings, teachers across the country have heard about this approach and have begun using it with their students.

However, these studies, which focused on the practice of only one teacher with students at one grade level (sixth grade), clearly demonstrated the need to understand how dialogue journal writing might benefit LEP students at all grade levels--from early elementary through high school--and to provide teachers with materials that would help them to use dialogue journals effectively. This project was designed to meet that need.

Project Goals

The goals of the project were threefold:

1) To determine:

-- Whether and how dialogue journal writing can be implemented as a practice with LEP students at various grade levels;

-- What the benefits of dialogue journal writing are for promoting the academic success of LEP students at various grade levels, and what problems accompany their use;

-- What strategies teachers might use in their writing to develop the writing of their students.

2) To develop and disseminate materials for practitioners;

3) To equip practitioners to disseminate the findings and products of the project to other practitioners, in the form of workshops and other technical assistance.

Methodology

Study of existing data. An existing data base of the dialogue journal and other in-class writing of a class of sixth grade LEP students formed one part of the data for this project. A sample of the dialogue journal writing (three weeks from the end of the school year) of 12 students was extracted for two studies: one of the impact of various teacher strategies on the students'

writing and one, a comparison of the students' dialogue journal and in-class writing, produced during the same period of time.

Collection of new data. Three experienced dialogue journal teachers in the Arlington County High Intensity Language Training Program (HILT, a program for LEP students) were chosen for a year-long collaborative study of their use of dialogue journals (one taught grades 1 and 2; one, grades 4-6; one, grades 9-12). Regular observations were conducted in their classes; they and a sample of their students (9 per class, for a total of 27) were interviewed early and late in the year; all of the dialogue journal writing and a sample of other in-class writing were collected from the selected students. Two additional experienced dialogue journal teachers at each grade level were also interviewed early and later in the year to assure that patterns found in the three classes were not entirely idiosyncratic (for a total of 9 teachers).

Results

1. The following results were obtained from the research studies of the existing data:

-- In the study of effective teacher strategies (Peyton & Seyoum, 1988), we found that the teacher took a non-directive stance in the journals, much different than the teaching style that has been found in most studies of classroom interaction. Rather than introducing topics and asking questions for the students to answer, she supported the topics that they introduced and made contributions of her own, seeking to develop collaborative written discussions. These strategies seemed to promote these students' participation in the writing (they wrote much more than the minimum required), and seemed more effective than an alternative strategy of simply asking questions to elicit student

writing, reported in other studies of interaction in dialogue journals (Hall & Duffy, 1987, for example).

-- In the study comparing dialogue journal writing with the assigned essay writing of the same students (Peyton, Staton, Richardson, & Wolfram, 1988), we found that the dialogue journal writing was equivalent in several ways to the more formal, assigned compositions--it was at least as complex syntactically and in some cases more complex, it consisted of extended texts of similar length, and it had similar cohesive qualities. In addition, individual students demonstrated more advanced facility with writing in English than they demonstrated in their assigned texts. We can conclude, therefore, that the dialogue journals provided an opportunity for these students to develop aspects of their writing that are helpful for producing more formal, assigned pieces.

2. A third study grew out of the new data that were collected.

-- This study focused on classroom observations and writing samples of a class of beginning writers, in the first grade (Peyton, in preparation). We found that these students were able to begin working with their journals even when they were at the beginning stages of developing their oral abilities in English. They gradually moved through the stages of writing development reported for native English speakers (Calkins, 1983; Graves, 1983)--drawing, then copying words and phrases in their environment, creating texts with invented spelling, and then producing written texts that were close to standard English. As their oral proficiency increased, this was reflected in their writing development.

Because the project was terminated two years early, other studies that were planned of the new data collected were not conducted.

3. The following materials were developed for practitioners:

-- A teacher handbook for using dialogue journals with LEP students, from early elementary through high school;

-- A workshop packet for teachers to use to train other teachers in the use of dialogue journals;

-- A question-answer sheet about dialogue journals, to be distributed in response to inquiries about the project and used as a handout in workshops;

-- Three issues per year of Dialogue, a newsletter about dialogue journals, were sent to a mailing list of 500 teachers and educational researchers.

Discussion

It is clear that the practice of dialogue journal writing can be effectively implemented with LEP students at all grade levels. Teachers adapt the practice to suit their goals, the educational needs of their students, and the students' English proficiency levels. The study of first grade students demonstrated that dialogue journals can be used effectively even with LEP students who do not yet know how to write, and can assist in their beginning literacy development. However, in order to fully understand how the practice can be implemented most effectively, the data from interviews with experienced dialogue journal teachers need to be carefully examined. Since this project was terminated prematurely, these data were collected but not analyzed.

The study of the written text of sixth grade students indicates that dialogue journal writing can be a very important part of LEP students' academic development. In the non-threatening, supportive context of the journal, they have extensive opportunities to practice writing skills needed to perform more academic writing tasks. However, only a small part of the data base has been studied. In order to fully understand how dialogue journals can promote LEP

students' academic success, the writing development of students at all grade levels, lower elementary through high school, in dialogue journals and other assigned texts, needs to be studied.

It appears that the ways that teachers implement the approach and the strategies they use in their writing have a tremendous impact on its success. Materials and training for teachers are crucial if this approach is to have a beneficial and lasting impact on the students and teachers involved, and teachers themselves need to be trained so that they can present the approach to other teachers. We have prepared these materials, but they need to be published and distributed.

A vehicle for continued dissemination of information about dialogue journal uses and research needs to be maintained. The newsletter that has been established has experienced tremendous success and must be continued so that the network of teachers and researchers interested in dialogue journals that has been established can be maintained and expanded.

Finally, this project needs to be replicated with different student populations with special needs. Staff working with learning disabled and adult non-literate populations, for example, have shown tremendous interest in the approach, but so far little research has been done and no materials have been developed.

References

Calkins, L. M. (1983). Lessons from a child. Portsmouth, NH: Heinemann.

Graves, D. (1983). Writing: Teachers and children at work. Portsmouth, NH: Heinemann.

Hall, N., & Duffy, R. (1987). Every child has a story to tell. Language Arts, 64(5), 523-529.

Heath, S. B., & Branscombe, A. (1985). "Intelligent writing" in an audience community: Teacher, students, and researcher. In S. W. Freedman (Ed.), The acquisition of written language: Response and revision (pp. 3-32). Norwood, NJ: Ablex.

Kreeft, J., Shuy, R. W., Staton, J., Reed, L., & Morroy, R. (1984). Dialogue writing: Analysis of student-teacher interactive writing in the learning of English as a second language (Final report, National Institute of Education Grant No. NIE-G-83-0030). Washington, DC: Center for Applied Linguistics. (ERIC Document Reproduction Service No. ED 252 097)

Levin, J., Riel, M, Rowe, R., and Boruta, M. (1985). Muktuk meets jacuzzi: Computer networks and elementary school writers. In S. W. Freedman (Ed.), The acquisition of written language: Response and revision (pp. 160-171). Norwood, NJ: Ablex.

Peyton, J. K. (in preparation). Beginning at the beginning: First grade ESL students learn to write. To appear in Advances in language education, to be published as a CLEAR Educational Volume.

Peyton, J. K., & Batson, T. (1986, September). Computer networking: Making connections between speech and writing. ERIC/CLL News Bulletin, 10(1), pp. 1-7.

Peyton, J. K., & Seyoum, M. (1988). The effect of teacher strategies on students' interactive writing: The case of dialogue journals (Technical Report Series No. 7). Los Angeles: University of California, Center for Language Education and Research. To appear in Research in the Teaching of English.

Peyton, J. K., Staton, J., Richardson, G., & Wolfram, W. (1988, March). Beyond writing assignments: The influence of communicative context on ESL students' writing. Paper presented at the twenty-second annual TESOL convention. Chicago, IL.

Staton, J., Shuy, R. W., Peyton, J. K., & Reed, L. (1988). Dialogue journal interaction: Classroom, linguistic, social, and cognitive views. Norwood, NJ: Ablex.

Project Title: *Improving Reasoning Skills* (2.4)

Project Director: Richard Duran

Description: *Students who acquire English as a second language must master uses of the language allied with the study of school subject matter. In academic reading, they must go beyond mastery of vocabulary and sentence syntax, and the recognition of the meaning of isolated sentences. Among other things, they must learn to detect and analyze meaning arising from passages as a whole, and further, they must learn how to reason from information stated in a text. The present three-year project is developing procedures for assessing college-level ESL students' propensity to evaluate the soundness of conclusions claimed to follow from text passages. The goal of the project is to develop diagnoses of specific kinds of reasoning that prove problematical for students, and to then explore development of exercises that would remediate students' difficulties. The project is currently in its third year.*

During the first year, a computerized reasoning assessment procedure was developed. The procedure presents subjects with five text passages. Each passage is followed by 20 conclusions presented in a random order. Ten of the conclusions logically follow from a passage while another 10 do not follow. The 10 invalid conclusions are designed to embody specific formal and informal fallacies in the analysis of logical arguments. During year two, the computerized reasoning assessment was administered to 24 ESL students. Contingency tables were developed showing subjects' propensity to detect valid and invalid conclusions for all passages. The tabled data shows clear and consistent differences among subjects in their ability to evaluate conclusions of specific kinds. Results of the administration for one class of conclusions are described in the draft Technical Report, "Evaluating Conditional Conclusions". During year three, attention is given to the creation of reasoning exercises that could be coupled with a diagnostic assessment of reasoning skills. Examples of exercise types being considered include identifying text information providing premises for an argument, and interpreting differences in the meaning of "if-then" conditional statements.

Project 2.5: Language and Problem Solving in Secondary School Science Classes

Project Directors: George Spanos and JoAnn Crandall

Status: In progress, Year 4

Rationale

Seminars conducted at CAL and at UCLA during the CLEAR orientation period and earlier research conducted at CAL provided compelling reasons why efforts were needed to integrate language and academic content instruction in secondary mathematics and science classes. Since language minority secondary school students are often assigned to regular English medium classes before their English academic language skills are adequately developed, there is a pressing need for research on the integration of language skills and subject matter, particularly in math and science problem solving. Prior studies demonstrated that supplementary materials which can be used in a variety of instructional settings, both language and content classes, can help such students. Materials created at CAL by Crandall, Dale, Rhodes, and Spanos (1985) which integrate language and content for postsecondary language minority students in beginning algebra provide a model which can be adapted for use in math and science at the secondary school level. The data collection of this earlier project also suggested avenues for research regarding possible differences between language groups in the ability to engage in problem-solving activities in math and science.

This study is based on several assumptions regarding the relationship between language learning and academic content learning. First, there is a strong relationship between language proficiency and proficiency in academic fields (Cummins, 1981), especially in math problem solving (Mestre, 1982; Dawe,

1984; Cuevas, 1984; Cossio, 1978). Second, there is reason to believe that a similar relationship exists for problem solving in science, because, on the one hand, problem solving in science requires the knowledge and application of mathematical concepts, and, on the other, because it presupposes facility in cognitive linguistic skills such as analysis and hypothesis (Kessler and Quinn, 1984; Penfield and Ornstein-Galicia, 1981; Rodriquez and Bethel, 1983). Third, crucial factors which define this relationship are: a) academic language proficiency in L1 and/or L2 in the registers of math and science (Cummins, 1981; Dawe, 1984; Ulijn, 1985; Swales, 1984; Halliday, 1985); and b) the nature of L1 in its embodiment of the math and science registers (Halliday, 1985) and in the kinds of verbalization skills, cognitive skills (Kessler and Quinn, 1984; Kessler, Quinn and Hayes, 1985), and problem-solving strategies developed in L1.

Project Goals

If the assumptions stated above are correct, then it is worthwhile to attempt to identify key linguistic, strategic, and affective factors through case studies of different language groups using data collected via questionnaires, tests, and problem-solving sessions (Mestre, 1982; Tsang, 1984; Cuevas, 1984; Spanos, Rhodes, Dale, and Crandall, 1988; Greeno, 1978). Once these factors have been identified, teaching techniques and materials can be devised which facilitate problem solving through the integration of language and content instruction (Mohan, 1986; Crandall, Dale, Rhodes and Spanos, 1985).

Thus, this study sought to investigate 1) the nature and acquisition of the linguistic registers of math and science; 2) ways in which students can be equipped, linguistically, cognitively, or both, to acquire these registers; and 3) the kinds of materials, teaching techniques, and curricula which facilitate

acquisition of language and math/science content. In addition to providing insights on these issues through interviews, classroom observations, and problem-solving case studies, the project has sought to produce the kinds of materials and guidelines which facilitate the integration of language and academic content instruction.

Methodology

Data were collected from tests, questionnaires, and problem-solving sessions with 8th grade physical science and 10th grade biology students enrolled in Arlington County, VA science classes, where the students were language minority students who were enrolled in ESL and science classes designed especially for them. Tests and questionnaires were administered by teachers. Word problems for use in problem-solving sessions conducted by project staff were selected from mathematics tests or created on the basis of known mathematics misconceptions of language minority students (Benander and Clement, in progress). Other word problems were selected from science tests and materials with help from CLEAR consultants and participating teachers. Questionnaires solicited ethnolinguistic and educational information. Project staff were also given access to locally administered language, math, and science proficiency test scores for these students.

During the data collection stage, teachers administered the tests and questionnaires, and classroom observations were conducted. Following the observation period, students were interviewed by project staff and then engaged in small group (3-5 students) problem solving sessions which focused on the earlier test problems. Sessions were taped, transcribed, and later analyzed. After analysis of all data, interviews were conducted with teachers to discuss the test results, questionnaires and transcripts. Information gathered in this

process was used to identify linguistic, strategic, and affective factors influencing student performance, and to provide insights for the development of teaching guidelines, techniques, and materials.

Following data collection and data analysis, materials and teaching were developed which took the various linguistic, strategic, and affective factors into consideration. These materials and guidelines were then given to the teachers for field-testing in physical science and biology classes. Materials try-out questionnaires, teacher interviews, and classroom observations then provided qualitative feedback which was used to revise the materials and guidelines and further explicate the factors underlying student performance.

Results

This project had four major outcomes. First, project staff were able to identify linguistic, strategic, and affective factors which affect the acquisition of scientific knowledge by language minority students in English language classes. It was learned, for example, that scientific communication among language minority students is not facilitated by traditional "chalk and talk" classrooms in which teachers lecture while students listen passively. The nature of these classrooms and scientific language itself requires greater attention to the syntactic, semantic, and pragmatic features underlying the scientific register. On the other hand, we observed that scientific knowledge could be imparted in a process-oriented, learner-centered, interactive framework which maximized opportunities for communication in the language of science. Second, these observations enabled project staff to develop materials, techniques, and guidelines to assist teachers of language minority science students. The materials were designed to be used interactively in classrooms where the instructor is more sensitive to the linguistic needs of

the students and free to utilize strategies such as cooperative learning which maximize communication. Third, the materials, guidelines, and techniques were disseminated to teachers through colloquia, seminars, and workshops for researchers and practitioners. Finally, dissemination has led to collaboration between language and science teachers, and recognition among science and other classroom teachers of the need for linguistically sensitive content instruction to benefit students for whom academic language is a barrier to success.

Discussion

The primary implication of this work is that greater cooperation between language and science teachers is necessary in order to provide appropriate instruction in science for language minority students. Cooperation is needed in materials development and curriculum design, and staff training needs to be provided for teams of language and science teachers. Staff training and materials development needs to be followed up with try-outs of materials and techniques, classroom observations, and follow-up training sessions.

Another implication of this work is that further research is needed in the area of analysis of the linguistic, strategic, and affective factors influencing student performance in mathematics and science. Information on factors collected through this study is suggestive but not conclusive due to the limited sample and the emphasis on the development and dissemination of materials, teaching techniques, and teacher guidelines based on this limited sample. One area for future research, originally proposed but subsequently cut from this work, involves possible variations in problem-solving ability and the development of learning strategies as a function of the orthographic nature of a student's first language. In the early phases of this study, project staff uncovered evidence from a variety of sources (Koda, in progress; Tzeng, 1983;

Chu-Chang and Loritz, 1976; Tzeng, Hung, and Garro, 1978; Martin, 1972; Makita, 1968; Tzeng, Hung, and Wang, 1977; Park and Arbuckle, 1977; Yik, 1979; and Yeh, 1985) which suggests that orthography is related to the acoustic and semantic processing of symbolic codes, to memorization, and to dyslexia. In addition, it is reasonable to suppose that knowledge of Chinese logographs and how to use Chinese dictionaries inculcates learning strategies which may transfer to math and science problem-solving tasks. Research in this vein would require working with schools which enroll sufficient numbers of students from orthographic and alphabetic language backgrounds.

References

Benander, L., & Clement, J. (In progress). Catalogue of error patterns observed in courses on basic mathematics. Project at the University of Massachusetts, Amherst, funded by the Fund for the Improvement of Postsecondary Education and by the Exxon Education Foundation.

Chu-Chang, M., & Loritz, D. J. (1976). Phonological encoding of Chinese ideograms in short-term memory. Language Learning, 27(2), 341-352.

Cossio, M. G. (1978). The effects of language on mathematics placement scores in metropolitan colleges. Dissertation Abstracts International, 38, 40002A-4003A. (University Microfilms No. 77-27, 882).

Crandall, J., Dale, T. C., Rhodes, N., & Spanos, G. (1985). The language of mathematics: The English barrier. Project at the Center for Applied Linguistics funded by the Fund for the Improvement of Postsecondary Education, Grant No. G00940473.

Cuevas, G. (1984). Mathematical learning in English as a second language. Journal for Research in Mathematics Education, 15, 134-144.

Cummins, J. (1981). The role of primary langauge development in promoting educational success for language minority students. In Schooling and language minority students. Los Angeles: California State University, Evaluation, Dissemination and Assessment Center.

Dawe, L. (1984, August). A theoretical framework for the study of the effects of bilingualism on mathematics teaching and learning. Sydney, Australia: Sydney Institute of Education. Paper presented at the Fifth International Congress on Mathematical Education, Adelaide, Australia.

Greeno, J. G. (1978). A study of problem solving. In Robert Glaser, (Ed.), Advances in instructional psychology, Vol. 1. Hillsdale, NJ: Erlbaum.

Halliday, M. A. K. (1985, April). Language across culture. SEAMO Language Centre. Paper presented at the Twentieth Regional Seminar, Singapore.

Kessler, C., & Quinn, M. E. (1984, March). Second language in the context of science experiences. Paper presented at the 18th Annual Convention of Teachers of English to Speakers of Other Languages, Houston, TX. (ERIC Document Reproduction Service No. ED 248 713)

Kessler, C., Quinn, M. E., & Hayes, C. W. (1985, October). Processing mathematics in a second language: Problems for LEP children. Paper presented at Delaware Symposium VII on Language Studies, Newark, DE.

Koda, K. (In progress). Orthography and acoustic coding strategies. Working draft.

Makita, K. (1968). The rarity of reading disability in Japanese children. American Journal of Orthopsychiatry, 38, 599-614.

Martin, S. E. (1972). Nonalphabetic writing systems: Some observations. In J. F. Kavanaugh and I. G. Mattingly (Eds.), Language by ear and by eye. Cambridge, MA: MIT Press.

Mestre, J. P. (1982). The learning of algebra by 9th graders: Research findings relevant to teacher training and classroom practice. Prepared for the National Institute of Education for distribution among teacher trainers and practitioners. (ERIC Document Reproduction Service No. ED 231 612)

Mohan, B. (1986). Language and content. Reading, MA: Addison-Wesley.

Park, S., & Arbuckle, T. Y. (1977). Ideograms Versus Alphabets: Effects of script on memory in "biscriptural" Korean subjects. Journal of Experimental Psychology: Human Learning and Memory, 3(6), 631-642.

Penfield, J., & Ornstein-Galicia, J. (1981). A problem-solving model for integrating science and language in bilingual/bicultural education. In R. V. Padilla (Ed.), Ethnoperspectives in bilingual educaton research. Ypsilanti, MI: Eastern Michigan University Press.

Rodriquez, I., & Bethyl, L. J. (1983). An inquiry approach to science and language teaching. Journal of Research in Science Teaching, 20(4), 291-296.

Spanos, G., Rhodes, N. C., Dale, T. C., & Crandall, J. (1988). Linguistic features of mathematical problem solving. In R. R. Cocking and J. P. Mestre (Eds.), Linguistic and cultural influences on learning mathematics. Hillsdale, NJ: Erlbaum.

Swales, J. M. (1984, November). ESP comes of age? 21 years asfter some measurable characteristics of modern scientific prose. UNESCO ALSED-LSP Newsletter, 7(2).

Tsang, S-L. (1984). The mathematics education of Asian Americans. Journal for Research in Mathematics Education, 15, 114-122.

Tzeng, O. (1983). Cognitive processing of various orthographies. In M. Chu-Chang and V. Rodriquez (Eds.), Asian and Pacific American perspectives in bilingual education: Comparative research. New York: Teachers College Press.

Tzeng, O., Hung, D. L., and Garro, L. (1978). Reading the Chinese characters: An information processinv view. Journal of Chinese Linguistics, 6, 287-305.

Ulijn, J. M. (1985, November). Summary of an article entitled: The scientific and technical register and its cross-linguistic constraints and values. UNESCO ALSED-LSP Newsletter, 8(2)(21).

Yeh, T-M. (1985, November). Psycholinguistic interference of characters in reading Chinese. Paper presented at the Chinese Language Teachers' Association Conference, New York.

Yik, W-F. (1978). The effect of visual and acoustic similarity on short term memory for Chinese words. Quarterly Journal of Experimental Psychology, 30, 459-504.

Project 2.8: Processes and Significant Features of Cooperative Learning

Project Director: Evelyn Jacob

Status: Terminated, end of Year 2

The primary purpose of this study was to examine the processes and significant features of a successful cooperative learning class for language minority students.

Rationale

Cooperative learning involves small groups of two to six students who work together, aid each other in completing learning tasks, and are rewarded for rendering that aid. A large body of research demonstrates that cooperative learning raises academic achievement, improves intergroup relations, and raises self esteem of native English speakers (Slavin, 1983). Although research on the effects of using cooperative learning specifically with language minority students is just beginning, the findings are consistently positive (Bejarano, 1987; Sharan et al., 1985). Second language acquisition theory (see Krashen, 1981; Krashen & Terrell, 1983) suggests that cooperative learning should facilitate the development of English proficiency of language minority students by providing them with more opportunities to hear and to use English in natural, communicative settings than they would experience in traditional whole class instruction.

Most previous studies of cooperative learning have focused on documenting outcomes. While documenting instructional outcomes is very important, it does not explain why a method works, nor is it always sufficient for successful application (Barr, 1986).

This is particularly true for cooperative learning since there are many kinds of cooperative learning methods differing on many dimensions (Kagan,

1985). As Slavin stated in the conclusion of a major review, "Perhaps the most important questions about the effects of cooperative learning on student achievement is why they occur" (Slavin, 1983, p. 124). This study was designed to address this need by examining the processes and significant features of a successful cooperative learning class for language minority students.

Project Goals

The goals of this study were to identify classrooms that successfully use cooperative learning with language minority students and then to conduct a case study of one of these classrooms. We proposed two phases for the project. The preliminary phase was a national study of existing programs to identify and describe successful cooperative learning classes for linguistic minority students. The primary phase was a case study of one classroom that exemplifies a promising model for dissemination. The case study would describe the outcomes and the social interaction processes of a successful cooperative learning class, and identify the features that seem to contribute to these processes and outcomes.

Only the preliminary phase of the study was implemented because funds were cut before the primary phase could be conducted.

Methodology

Preliminary Phase. To identify practitioners who use cooperative learning with language minority students, we used self-identification (through responses to announcements in major publications) and "snowball" sampling (Dobbert, 1982), the best methods for identifying members of a small and dispersed population in a short time. We then conducted semi-structured telephone interviews with forty-eight practitioners across the country. We analyzed the

interviews qualitatively (through indexing) and quantitatively (through coding).

Results

Preliminary Phase. The practitioners reported benefits for a wide range of language minority groups in academic achievement, English proficiency, social interaction, and attitudes and psychological adjustment. We also found that outside of California, most practitioners who are using cooperative learning with language minority students are doing so as isolated individuals rather than as part of a district or school-wide effort. Teachers only began using cooperative learning with language minority students within the past few years. Consequently, few studies have been done of the effectiveness of these efforts.

Practitioners reported success in using a wide variety of cooperative learning methods with a wide range of language minority students. Moreover, the teachers frequently reported that they adapted the "formal" cooperative learning for their particular classes. The apparent success teachers experienced with a wide range of cooperative learning methods suggests the rich potential that these methods offer. However, because of the variety of cooperative learning methods used and the lack of effectiveness studies, we were not able to identify specific models of successful implementation.

Discussion

The teachers' reports are consistent with previous research and suggest that cooperative learning is successful with a wide range of language minority groups. However, the work in this area is only beginning. We need further research to see if cooperative learning is uniformly successful across language groups and if specific forms of cooperative learning facilitate achievement and

language acquisition for some language minority groups more than others. Most importantly, we need to examine the processes the occur within cooperative learning groups so we can begin to understand how and why they work.

References

Barr, R. (1986). Commentary: Studying classroom reading instruction. Reading Research Quarterly, 21, 231-236.

Bejarano, Y. (1987). A cooperative small-group methodology in the language classroom. TESOL Quarterly, 21, 483-504.

Dobbert, M. L. (1982). Ethnographic research: Theory and application for modern schools and societies. New York: Praeger.

Kagan, S. (1985). Dimensions of cooperative classroom structures. In R. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowtiz, C. Webb, & R. Schmuck (Eds.), Learning to cooperate, cooperating to learn (pp. 67-96). New York: Plenum.

Krashen, S. (1981). Second language acquisition and second language learning. Oxford: Pergamon.

Krashen, S., & Terrell, T. (1983). The natural approach: Language acquisition in the classroom. Oxford: Pergamon.

Sharan, S., Kussell, P., Hertz-Lazarowitz, R., Bejarano, Y., Raviv, S., & Sharan, Y. (1985). Cooperative learning effects on ethnic relations and achievement in Israeli junior-high-school classrooms. In R. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowtiz, C. Webb, & R. Schmuck (Eds.), Learning to cooperate, cooperating to learn (pp. 313-344). New York: Plenum.

Slavin, R. (1983). Cooperative learning. New York: Longman.

I. The Adjunct Model of Language Instruction for Language Minority College Students

Marguerite Ann Snow and Donna M. Brinton

Project 2.9

II. Rationale: The nation's colleges and universities are forced with the mounting question of how to educate the steady stream of underprepared students entering higher education. These incoming students, both from language majority and language minority backgrounds, enter the university lacking the essential skills required to succeed academically. For language majority students, the lack of skills required to synthesize lecture and text material and to express this information in writing assignments and examinations hinders their progress at the university. For language minority students, these problems are even more pronounced. In addition to being inexperienced in academic skills, language minority students may be less proficient in English, therefore further limiting their potential for university success.

This project examines the Freshman Summer Program (FSP), a seven-week intensive program which was established at UCLA in 1977 to bridge the gap between high school and college. The primary academic goal of FSP is to introduce underprepared incoming freshman to the academic rigors of the university. Equally important goals of FSP are to provide students with the social and recreational needs important during this transition period, to build positive self-images, and to insure emotional stability throughout the program. The primary goal is

achieved through FSP's academic component; the latter goals are accomplished through the program's on-campus residential program, academic and personal counseling services, forums and social programs, and tutorial services.

III. Project 2.9 consisted of three sub-studies. The research questions for each study are listed below:

Study #1:

1. What was the profile of former ESL students who had participated in FSP from 1981-1985 (e.g., major, GPA, persistence at the university)?
2. How did the former ESL participants in FSP value the seven-week summer program immediately after completing the course?
3. What was the former ESL students' retrospective evaluation of FSP after they had taken regular courses during other school years?

Study #2:

1. What is the home language background of the lower proficiency students enrolled in FSP?
2. What exposure to academic skills did these students have in high school?
3. How do these students assess their academic skills at the beginning, middle, and end of the FSP term?

Study #3:

1. How do the former ESL students in FSP adjust to UCLA during the regular year?

2. How do the former ESL participants in FSP compare to the ESL students who did not participate in the program in terms of English proficiency and academic skills?

IV. Methods: Subjects for Study 1 were 224 students enrolled in the ESL track of FSP during the summers 1981-85. The majority of the students were Asian immigrants and all were incoming freshmen at the time they attended FSP. Two instruments were used to collect follow-up information about the former FSP students. The first instrument was the FSP course evaluation which was developed by the FSP administration. The second instrument, a questionnaire, was developed by the researchers. It asked the students to rate the usefulness of certain academic activities or skills they were exposed to in the FSP curriculum.

Subjects for Study 2 were the lower proficiency students enrolled in FSP during the summer 1986 term. The sample consisted of 111 students. Two instruments were developed for the study. The first was a survey of the home language background and academic activities the students had been exposed to in high school. The second instrument, the Self-Assessment Scale, was designed to assess the students' degree of confidence on a number of academic skill dimensions.

Twelve students from the 1986 summer program were followed up in Study 3. In addition, students in a regular ESL who had not been enrolled in FSP were selected for comparison with the L2 former FSP students. A structured interview was developed which consisted of a set of questions pertaining to the academic problems the students were

encountering during their first quarter at UCLA. A second instrument, a simulated final exam, was designed to compare the academic skills of the former FSP students with the ESL students enrolled the regular section.

V. Results: Responses to the program evaluation in Study 1 confirmed the value of many of the components of FSP. Students felt that they were better readers and writers as a result of FSP. The results of the retrospective evaluation provided strong validation of the overall usefulness of FSP in easing the transition from high school to the university. In terms of Study 2, the results of the Self-Assessment Scale reveal that the students generally felt that they had improved their academic skills during FSP. The focus in the FSP curriculum on writing skills was reflected in the self-reported improvement on the various items pertaining to these skills. The data from the structured interviews in Study 3 provide additional evidence of the beneficial effects of FSP in helping to prepare students to cope with college-level work. Of particular interest were the students' comments concerning the rigorous nature of the FSP English course, which the students realized in retrospect. The results of the simulated final exam provided evidence that the FSP instructional model was an appropriate one for students who come to the university with weak language and academic skills. Despite the fact that the FSP students had significantly lower ESL placement scores, they were able to compete with their ESL counterparts on a task requiring them to use the kinds of academic skills which are crucial for success at the university.

VI. Implications: The adjunct model of language instruction provides a sound pedagogical framework for introducing underprepared students to the academic demands of university work. The results of this study have far-reaching implications for educational planning and policy. First, the current movement in second language education at all levels of instruction is toward content-based approaches. This study documents the effectiveness of one type of content-based program, the adjunct model. A second policy implication concerns the multi-cultural reality of education in the United States, particularly in large urban areas with burgeoning populations of limited English proficient students. The adjunct model holds promise as a viable approach for assisting this type of student to succeed in a university setting.

TASK THREE

TASK 3: PROFESSIONAL DEVELOPMENT FOR THE LANGUAGE EDUCATOR

Until recently, there have been few professional development programs available for teachers of language minority students, and those that have been available are disparate and selective in their efforts, often focusing only on ESL teachers, or bilingual teachers, or teachers of refugees. What is needed is a comprehensive program of professional development, addressing such issues as program design, methododology, curriculum and materials, and assessment and evaluation. Although particular professional development foci and training strategies must be determined through needs assessments, an important focus of all professional development for teachers of language minority students is one which helps bilingual, ESL, and mainstream teachers to effectively implement an integrated language and content area instructional program. Such training helps them teach not only social language skills, but also the more cognitively complex and demanding language required for success in math, science, social studies and other academic classes. Foreign language immersion teachers or teachers of advanced foreign language skills also need this professional development.

Thus, the purpose of the professional development program for the East Coast (Tasks 3.1 and 3.2) was to provide a coordinated professional development program for ESL, bilingual, and foreign language teachers, on areas of mutual concern, with a special emphasis on the integration of language and content instruction: i.e., helping the language teacher to teach the more formal and cognitively demanding academic language skills as well as social language and helping the content teachers to adapt their instruction to accommodate differences in language proficiency through greater attention to language needs and increased use of demonstrations, visuals, and interactive methods.

An integrated, three-year program of professional development activities was provided for two East Coast school districts with large numbers of language minority students (Arlington County, VA and Hartford, CT), and efforts were made to offer assistance to other school districts such as Montgomery County, MD, Red Clay (Wilmington, DE), and Prince George's County, MD. Central to these activities was an ongoing needs assessment, working within the professional development structure of the district, and providing a program of information and teacher exchanges between Arlington and Hartford, to enable teachers and administrators to learn from each other.

For Arlington County, our objective was to assist the district in better meeting the needs of an ethnically and linguistically diverse minority population, focusing specifically on ways of integrating language and content instruction. In our major sustained activity in Arlington, we assisted the staff of one elementary school to develop and evaluate a two-way bilingual program in Spanish and English, which is now in its third year with students in first, second, and third grades. The district plans to expand the program each year until all six grades are included. Of special interest in the Arlington program is the inclusion of many students in the program for whom English is a second language and Spanish a third. These students are performing as well as the students who are acquiring second language skills. The Arlington schools were also interested in developing foreign language offerings in addition to the innovative two-way

program. Activities for foreign language teachers included the development of a series of foreign language tests; the evaluation of software for computer-assisted foreign language instruction; the offering of a series of courses through the University of Virginia and George Mason University addressing communicative language teaching; and serving on the Parents' Advisory Committee. Teacher-researcher collaborations were also a means of providing ongoing professional development.

For Hartford, a major objective was to assist the district in addressing academic language in their ESL instruction and more broadly in integrating language and content instruction throughout the elementary grades. To accomplish this, we developed a K-6 integrated ESL and content area curriculum consistent with Hartford's mainstream curriculum and provided professional development workshops in how to use that curriculum. We also worked extensively with staff in one elementary school, and assisted them in developing a two-way bilingual component in Spanish and English for their program, beginning with the first grade.

This comprehensive program of professional development activities for ESL, bilingual, mainstream, and foreign language teachers has provided an excellent model for others to follow and attests to the importance of having centers such as CLEAR to provide collaborative and continual assistance. Too often, professional development is provided on an intermittent basis, with the frequent introduction of new topics or methods and insufficient follow-up or assistance to individual teachers to ensure that the new programs or approaches take hold. With on-going assistance over a sufficiently long period of time, changes can be implemented and continue, even after assistance has ended (in the case of CLEAR, two years before it was originally intended).

On a wider scale, we also sought to address the issue of academic language proficiency by developing an informal national network of educators interested and experienced in effective integration of academic skills and language development, and through informal surveys and a series of seminars dealing with various issues concerning this instruction, to explore, document, disseminate, and provide a means for extending current integrated language and content instructional programs.

That network has grown during the past four years to include key teachers, administrators, teacher educators, and researchers interested in integrated language and content instruction at elementary, secondary, and postsecondary levels. These individuals represent a broad range of disciplines: besides ESL, bilingual, and foreign languages, the network also includes science, math, language arts, art, and other fields. Through seminars, workshops, and conference participation; through a broad range of publications; through technical assistance by telephone and in person, it was possible to develop and expand this network.

Over the four year period, we collected information, hosted seminars, and produced a series of publications dealing with: 1) programs and methods for effectively integrating language and content instruction; 2) curricula and materials for integrating language skill development with academic learning, including the development of prototype materials with guidelines for their use; 3) teacher education programs, in-

service and pre-service, to assist language and content teachers to offer integra ed instruction; and 4) assessment measures for students enrolled in these programs, including both academic content development and language proficiency. An important outgrowth of these seminars has been increased collaboration among the language teaching disciplines (ESL, bilingual, and foreign) and also between these and other academic disciplines which have traditionally not been interested in issues of language or minority group achievement.

Our publications include educational reports, articles, training guides, and strategy sheets. The latter offer model lesson plans for integrating language instruction with a number of different content areas: science, mathematics, social studies, art, music, and physical education.

In addition, in an activity which cuts across both Tasks 3 and 4, we have developed and are maintaining a data base on materials for integrating language and content instruction at elementary and secondary levels, by subject area and by language. Thus, it is possible to access materials available for teaching ESL/science (by either the ESL or the science teacher) as well as Spanish/science, Chinese/science, etc.

One outgrowth of these CLEAR activities has been a major focus of professional meetings, at the state and national level, on methods and materials for integrating language and content instruction. By collaborating with professionals and professional associations representing other disciplines, it has also been possible to create a national network of educators at all levels and across all disciplines who share information and materials for improving the academic achievement of all students, especially those from language minority groups.

There is still a great deal to be done. The teacher training seminar identified the need for a series of videotapes which could be used with a manual to help schools or individuals get started with this method. The teacher training manual we have developed will serve as a good start, but it will be necessary to videotape individuals successfully engaged in the teaching and learning in integrated programs. There is also the need to bring together colleges of education and state certification personnel with some of these same seminar participants to undertake a revision of pre-service education programs to provide all teachers-in-training with the knowledge and skills that they need to effectively teach academic language and skills to language minority students. Ideally, this should be undertaken in an integrated classroom, where those who will be teaching all subject matters are provided with this information. Even those who do not end up teaching language minority students (probably a small number, given national demographic trends) will benefit, since approaches which increase a focus on language and on interaction are of benefit to all students, language majority included. In addition, although there is a good deal of anecdotal evidence about the effectiveness of an integrated language and content approach, there is still a need for a well-designed longitudinal research study to document how it works and to compare its effectiveness with more traditional instructional approaches for language minority students. The assessment seminar has identified a number of concerns and developed some basic guidelines for school districts and test developers to follow in the assessment of students

in integrated programs, but to date there are only two tests available, one of which was developed by CLEAR. More research and test development in this area are critical needs.

This professional development activity, however, has resulted in an expanding network of resources, programs, and individuals which future efforts can build upon.

Project 3.1: Preparation and Implementation of the Professional Development Program (East Coast Sites)

Project Director: JoAnn Crandall

Status: Terminated, end of Year 3

Rationale

Until recently, there have been few professional development programs available for teachers of language minority students, and those that have been available are disparate and selective in their efforts, often focusing only on ESL teachers, or bilingual teachers, or teachers of refugees. What is needed is a comprehensive program of professional development, addressing such issues as program design (especially the inclusion of integrated language and content instruction and language across the curriculum); methodology; curriculum and materials; and assessment and evaluation, with the particular professional development foci and training strategies determined through needs assessments.

The purpose of this project was to provide an integrated, five-year program of professional development activities, for two East Coast school districts with large numbers of language minority students (Arlington County, VA and Hartford, CT), and to offer assistance where possible to other school districts such as Montgomery County, MD, Red Clay (Wilmington, DE), and Prince Georges County, MD.

Project Goals

In working with Arlington County, the objective was to assist the district in better meeting the needs of an ethnically and linguistically diverse minority population, focusing specifically on ways of integrating language and content instruction, i.e., helping ESL teachers to incorporate more academic

language, skills, and activities in their classes and helping content teachers to better adapt their instruction to accommodate students of different language proficiency levels. Another related interest was in identifying different learning styles and developing classroom and lesson planning strategies for students using these different styles. In addition, Arlington was interested in developing their foreign language program offerings, specifically through training in communicative methodologies for the secondary school teachers and through the implementation of a two-way bilingual program in Spanish and English for elementary students.

With Hartford, similar objectives emerged from the needs assessment--to assist the district in integrating language and content instruction, principally at the elementary grades and to assist in establishing a pilot two-way Spanish and English bilingual program. For Hartford, the development of a specific K-6 integrated ESL and content area curriculum and the presentation of professional development workshops on how to use that curriculum were highest priority.

Methodology

During the first year of the project, we conducted extensive needs assessments in each school district, talking with the superintendents, principals, supervisors for ESL/bilingual/foreign language education, and teachers; observing classes; analyzing curricula and tests; and generally getting to know the districts better and collaboratively identifying major areas for development and strategies for implementing these. For programs for language minority students, each district had its own mechanisms for providing professional development. In Hartford, discussions usually involved central office staff, followed by visits to schools and discussion with the principals

and teachers. In Arlington, teachers interested in addressing a topic would form a Tech Team to investigate the problem and decide on ways of addressing it; thus, in Arlington, talks with supervisors of ESL and foreign language education would then lead to participation in Tech Teams and special workshops and university courses which provided academic credit. In developing and implementing two-way bilingual programs, we worked directly with the supervisors, principals, and teachers involved.

Results

During the first three years of CLEAR, we were able to accomplish the following:

For Arlington:

1. Working with Tech Teams in secondary school math/ESL focusing on integrated instruction for both areas; computer assisted language learning, including evaluation of software; and language and cognition.

2. Developing a series of foreign language tests for the county.

3. Providing a series of academic courses through the University of Virginia and George Mason University on language acquisition, phonology, communicative language teaching, and culture.

4. Setting up a series of exchanges between teachers and principals in Arlington and Hartford, with in-service training provided for the site being visited. We also arranged a meeting at CAL to bring together the superintendents of these two school districts.

5. Stimulating teacher-researcher collaborations with CLEAR staff and CLEAR senior advisors. For example, Shirley Brice Heath worked with the K-1 ESOL and Reading Tech Team to improve reading and writing skills in these grades.

6. Participating in community and parent activities. A CLEAR staff member served as the chair of the Arlington Advisory Committee on Foreign Languages, helping to stimulate and focus parental concerns on program objectives.

7. Assisting in the development and implementation of a two-way bilingual program, beginning at first grade and now operating for grades 1, 2, and 3, including identifying potential curricula and other resources, working with teachers and providing information to parents. In addition, we have conducted an annual evaluation of the program, observing classes on a regular basis, conducting pre- and post-tests, and interviewing various members of the instructional staff, the students, and their parents.

8. Developing professional development guides, including one on ways of adapting instruction to provide for students' different learning strategies.

For Hartford:

1. Analyzing data about the school population, professional staff, and existing resources to identify needed professional development for implementing a two-way bilingual program and for providing assistance in integrated language and content instruction for the ESL/bilingual program.

2. Arranging exchanges between Hartford and Arlington teachers, providing staff development activities at the site of the visit.

3. Cooperating with the University of Connecticut and the regional Bilingual Multifunctional Resource Center in the development and implementation of more integrated and interactive instruction for language minority students. This resulted in a variety of in-service activities, including informal discussions with teachers and formal workshops and seminars.

4. Developing a K-6 integrated ESL/content curriculum which incorporates the academic and language objectives of the district for these grades.

In addition, we have worked closely with the Red Clay school district in Wilmington, DE, to evaluate their bilingual program and provide a set of recommendations for curriculum development and in-service training that will help them increase the integration of language and content instruction and move toward a two-way bilingual program. In Montgomery County, MD, we assisted staff in their attempts to increase the communicative activities within their foreign language instruction, and in schools in Prince George's County, MD, Fairfax County, VA, and the District of Columbia, staff provided selected professional development activities for language minority teachers.

Discussion

This comprehensive program of professional development activities for ESL, bilingual, mainstream, and foreign language teachers has provided an excellent model for others to follow and attests to the importance of having centers such as CLEAR to provide collaborative and continuing assistance. Too often, professional development is provided on an intermittent basis, with the frequent introduction of new topics or foci and insufficient follow-up or assistance to individual teachers to ensure that the new programs or approaches take hold. With ongoing assistance over a sufficiently long period of time, changes can be made and continue to grow, even after the assistance has ended. Ideally, this kind of program would not be terminated before its scope has been fulfilled. But, even if it is, if there has been ongoing assistance and collaboration, the school districts are in a much better position to continue the professional development program on their own.

Project 3.2: Developing an Information and Support Network of Educators of Language Minority Students

Project Directors: JoAnn Crandall and Donna Christian

Status: In progress

Rationale

Language minority students are often perceived as being sufficiently proficient in English to be assigned to English medium classes. However, as a number of researchers have shown (Cummins, 1980, 1981; Collier, 1987), unless a student has acquired academic language proficiency in the first language, it can take as long as five to seven years for that student to be able to function effectively in regular or mainstream classrooms. A major reason for this is the difference in language proficiency required for interpersonal communication and that required for academic success. Since many limited English proficient students do not have the opportunity of acquiring that academic language proficiency in their first language, it becomes the role of the ESL teacher to provide the basic academic language skills, with additional support being offered by regular classroom teachers in which the student is enrolled. One approach to achieving this is through integrated language and content instruction, whereby ESL teachers base at least some of their instruction on the texts and tasks required by math, science, social studies, or other subject classes and math, science, social studies and other subject area teachers adapt their instruction to accommodate differences in language proficiency through increased use of demonstrations, visuals, and interactive methods and through attention to the vocabulary and the special languages of the various subject areas.

However, the integration of language and content instruction was a new approach, with little or no exchange of information occurring. Moreover, there were many questions which needed to be addressed before there would be wider consideration of the approach, especially since cooperation between academic departments within the school was required.

Project Goals

To address these concerns, this project set the following goals: to develop an informal national network of educators interested and experienced in effective integration of academic skills and language development, and through informal surveys and a series of seminars dealing with various issues concerning this instruction, to explore, document, disseminate, and provide a means for extending current integrated language and content instructional programs.

Methodology

To begin the information collection and to establish a network, we contacted key teachers, administrators, and researchers who were engaged or interested in integrated language and content instruction, drawing from ESL, bilingual education, and foreign language education and teacher education in these fields. We also hosted a seminar on integrating language and content instruction and held a number of other meetings with CLEAR senior advisors and educators in local school districts. As a result of these discussions and meetings, a number of issues and needs were identified, helping to focus the professional activities for CLEAR. These included: 1) methods of effectively integrating language and content instruction; 2) curricula and materials for integrating language skill development with academic learning, including the development of prototype materials with guidelines for their use; 3) teacher

education programs, in-service and pre-service, for preparing teachers to offer integrated instruction; and 4) assessment measures for students enrolled in these programs, including both academic content development and language proficiency. We planned and conducted a series of annual seminars to address each of these issues, and prepared products which reflected the work of each seminar for wider dissemination.

Results

During the four years of CLEAR, we:

1. Developed a national network of practitioners, teacher educators, and researchers interested in effective integration of language and content instruction, at elementary, secondary, and postsecondary levels. These individuals come from a broad range of disciplines: besides ESL, bilingual education, and foreign languages, the network also includes science, math, language arts, art, and other fields. Through seminars, workshops, and conference participation; through a broad range of publications; through technical assistance by telephone and in person, it was possible to develop and expand this network.

2. Hosted four seminars, bringing together a diverse group of individuals engaged in teaching, administration, or research to discuss program models, methods, teacher education, and assessment of language and content instruction. These seminars resulted in collaboration among the language teaching disciplines and also between these and other academic disciplines which have traditionally not been interested in issues of language or minority group achievement.

3. Developed a series of publications to assist in these four areas. These included educational reports, articles, training guides, and strategy sheets. The latter provided model lesson plans for integrating language instruction with a number of different content areas: science, mathematics, social studies, art, music, and physical education.

4. Worked with Project 4.2 to develop and maintain a database on materials for integrating language and content instruction at elementary and secondary levels, by subject area and by language. Thus, it is possible to access materials available for teaching ESL/science (by either the ESL or the science teacher) as well as Spanish/science, Chinese/science, and so on.

5. Brought together ESL, bilingual, and foreign language educators and researchers in order to share information and concerns, especially in integrated instruction. This has resulted in a new sharing across disciplines and a recognition of the commonalities in these three areas. That recognition could lead to more integrated teacher education programs and greater preparedness of teachers to move between or among these teaching areas.

Discussion

Because of the CLEAR initiatives, a major focus of professional meetings, at the state and national level, has become methods and materials for integrating language and content instruction. By collaborating with professionals and professional associations representing other disciplines, it has also been possible to create a national network of educators at all levels and across all disciplines who share information and materials for improving the academic achievement of all students, especially those from language minority groups.

There is still a great deal to be done. The teacher training seminar identified the need for a series of videotapes which could be used with a manual to help schools or individuals get started with this method. The teacher training manual we have developed will serve as a good start, but it will be necessary to videotape individuals successfully engaged in teaching and learning in integrated programs. There is also the need to bring together representatives of colleges of education and state certification personnel with some of these same seminar participants to undertake a revision of pre-service education programs to provide all teachers-in-training with the knowledge and skills that they need to effectively teach academic language and skills to language minority students. Ideally, this should be undertaken in an integrated classroom, where those who will be teaching all subject matters are provided with this information. Even those who do not end up teaching language minority students (probably a small number, given national demographic trends) will benefit, since approaches which increase the focus on language and on interaction are of benefit to all students, language majority included.

The assessment seminar identified a number of concerns and developed some basic guidelines for school districts and test developers to follow in the assessment of students in integrated programs, but to date there are only two tests available, one of which was developed by CLEAR. Questions related to program evaluation also need to be addressed. There has been only limited research on the effectiveness of these programs which combine language and content instruction, although administrators, teachers, and students all affirm their effectiveness. There is a need to undertake a large-scale longitudinal evaluation in a variety of contexts and with a variety of subject areas and students to identify the determinants of successful programs.

Under this professional development activity, we have created an expanding network of resources, programs, and individuals which future efforts can build upon.

References

Collier, V. P. (1987). Age and rate of acquisition of second language for academic purposes. TESOL Quarterly, 214, 617-641.

Cummins, J. (1980). The construction of language proficiency in bilingual education. In J. E. Alatis (Ed.), Current issues in bilingual education. Washington, DC: Georgetown University Press.

Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In California State Department of Education, Schooling and language minority students: A theoretical framework. Sacramento: California State Department of Education.

TASK FOUR

Project 4.2: Materials, Curricula, and Programs for Second Language Education

Project Director: Donna Christian

Status: In progress

Rationale

With the growing interest in foreign language instruction at both the elementary and secondary level accompanied by increasing enrollments due to the reinstatement of foreign language credits required for graduation, the need is more critical for detailed and accurate information about the different types of teaching materials, curricula and programs available nationwide. The state of North Carolina, for example, will require foreign language in all elementary schools by 1993. Other states and local school districts have their own initiatives for beginning or expanding innovative foreign language programs, such as content-based instruction, two-way bilingual immersion programs, and programs for native speakers.

In several CLEAR-sponsored seminars and in various meetings at national foreign language conferences, one of the most frequently expressed needs by practitioners was for greater networking among schools so that knowledge about resources could be shared more easily to help them improve their programs. In order to facilitate the adoption of innovative programs and the expansion of existing ones, available resources need to be centralized, documented and shared with foreign language educators nationwide. In addition, lack of certain resources needs to be identified so that gaps may be filled for specific kinds of materials required.

Project Goals

The purpose of this project was to survey existing materials, curricula, and program designs; to distribute this information to language educators; and to identify needs and produce a prototype to fill gaps indicated by this needs assessment. These activities were designed to work toward two complementary goals: to maximize the usefulness of existing resources in language education and to provide additional tools.

Methodology

An in-depth survey of resources has been undertaken in the following targeted areas of concern: foreign language in the elementary schools (FLES), foreign language experience (FLEX), and foreign language immersion programs and materials; Spanish for Spanish speakers programs and materials; content-based language instruction; computer-assisted instruction (for specific types of programs); language proficiency tests; and professional development resources for second language educators. In response to practitioner concerns that have emerged in conjunction with other CLEAR activities, such as the two-way bilingual immersion programs, the survey's original scope was expanded to include materials on the integration of language and content for limited-English-proficient students and resources for English as a second language (ESL) educators in selected areas. The focus has largely been on materials produced by school districts which are more difficult to network than published materials. Relevant published materials are also included, however.

Procedures included contacting the following sources for information and database printouts: the ERIC Clearinghouse on Languages and Linguistics (ERIC/CLL), the National Clearinghouse for Bilingual Education, the former Evaluation, Dissemination and Assessment Centers, major journals and

newsletters, state boards of education, foreign language and ESL departments, representatives of publishers (and materials catalogues), school districts involved in CLEAR and CAL projects, surveys and documentation produced by other organizations (ACTFL, AATF, etc.), and information obtained from participation in professional organizations and conferences.

Curricula, materials, and program descriptions collected from school districts and publishers were annotated and entered into a database. Over 600 entries are currently accessible. In many cases, copies of resources were deposited at CAL, and a resource center was created for language educators to consult. Information and materials are shared with ERIC/CLL so that these resources will also be available through the ERIC system. Database printouts of the materials and curricula annotated in the form of targeted searches are periodically updated and have been distributed nationwide along with other CLEAR products.

Results

The project provides information in three series of products: annotated bibliographies of materials for specific languages and content areas (e.g., French language arts); instructional reports (e.g., strategies for integrating language and content instruction); and materials reports (e.g., listing of programs for native Spanish speakers). (See attached list of complimentary products.)

All of the information is provided free upon request to language educators, and hundreds of requests have been received and filled so far. Announcements about product availability have been made in the FLES News, at CLEAR/CAL presentations at national foreign language conferences (ACTFL, Northeast Conference, Advocates for Language Learning, TESOL), at regional and

local meetings of second language educators, and at workshops nationwide in which CAL/CLEAR staff have participated. A guide on "Incorporating Foreign Language Instruction into the Elementary Curriculum" has been produced (ER __), and a prototype curriculum guide for a content-based instructional program in Spanish (or French) at the elementary level is being developed, based on identification of these needs in the survey and through discussions with teachers.

At the close of the project, final versions of all database searches and other products will be deposited in ERIC so they may continue to be made available.

In conclusion, judging from the response received from school districts and educators, both in their willingness to send us information and materials and to spread the word among their colleagues, from the large number of requests for products and visits to the resource center, and from the enthusiastic comments given to CLEAR/CAL staff at conference presentations, it is evident that CLEAR is meeting a real need in the second language education field by providing the mechanism for collecting and disseminating invaluable information about innovative foreign language (and bilingual) materials, curricula and programs across the nation.

Discussion

The response to this project is evidence of the ongoing need for technical assistance in this area. As demands for innovative language education increase, educators need access to all available resources and help in connecting with others who have similar concerns. It is truly unfortunate when practitioners may be forced, through lack of information, to duplicate the efforts of others rather than build on them. Further, a central information

collection point is also in an excellent position to identify true gaps in available resources and to facilitate filling those gaps.

There has been a tremendous growth in interest in innovative language education programs, notably two-way bilingual immersion programs, content-based language instruction, FLES and immersion programs, and programs for native speakers (for Spanish speakers in particular). This project has documented this interest through requests for assistance received, and the need for assistance will continue to grow as well. Information about curricula, materials and programs in these areas can make an important contribution to success in the implementation of innovative approaches. The project has also documented the need for curricula and materials suitable for use by teachers and students in these language programs, and much work remains to be done. To give an example, teachers of Spanish language courses for native Spanish speakers often have to choose between materials imported from Spanish-speaking countries which may be culturally or dialectally inappropriate and Spanish as a second language materials produced for native English speakers which are pedagogically inappropriate. Similar concerns can be raised through examples from each of the program types mentioned above.

It is important that an information collection and dissemination center be maintained and updated. In addition, program and curriculum development, along with materials preparation, must be undertaken to keep pace with the exciting instructional innovations.

TASK FIVE

Task Five Summary

Task Introduction

The research in this area focused on the functional compartmentalization of language. Research was guided by the assumption that language consists of a unitary dimension that underlies all functions, regardless of their situational context (e.g., home or school) or their intrasituational functions (e.g., different classroom activities). An understanding of the multiple roles of language was sought.

At the same time, emphasis on the functions of language and the contexts in which they occur, led to interest in the training of language skills. The emphasis on the functions of language should not be seen as a dismissal of linguistic structures as innately determined but as a recognition of the multifaceted ways in which linguistic structures influence language skills.

The studies in this task addressed the following questions: How are the different functions of language related to each other in bilingual students? For example, how is decontextualized language related to contextualized language? Furthermore, how is any given function related between two languages? What is the nature of the linguistic functions in the context of the classroom, and are there interlanguage differences? Which are the processing characteristics of inter-language transfer for syntactic and semantic information in second-language learners and bilinguals? How can the results of this research affect classroom practice? Therefore, research was conducted at three levels of analysis and it focused on the training of specific language skills in bilingual children.

At the first level of analysis, concepts such as "speaking a language," "speaking a language like a native," and "being bilingual" were addressed with the individual student in mind. Theoretically sound definitions of these concepts as well as of the different types of language students, i.e., "native-speakers" and "true bilinguals," are crucial for understanding the educational issues involving bilingual children and second language learners. These issues include: a) How well does the child speak his/her native language? b) How well does s/he speak the school language? c) Will s/he benefit most from bilingual education, ESL, English enrichment, or the mainstream classroom? d) What aspects of the native language does the child need to maintain, remediate, or develop? 3) What aspects of English instruction does the child need the most help in? f) At what point are the child's skills in English sufficient to enable satisfactory functioning in a mainstream classroom? g) What set of oral language skills are required for reading proficiency, for comprehension of oral discourse in a mainstream classroom and for writing proficiency?

Answers to the above questions require a model of the language skills required in school and of importance to literacy as well as appropriate procedures for assessing such skills. Using her theoretical work (Snow, 1983), and her research with students in a supportive bilingual situation in the United Nations International School (Snow, 1984), Catherine Snow examined the central notions of contextualized (face-to face, conversational, supported by physical as well as social context) and decontextualized (planned, distanced, monologic) language skills. Specifically, she explored the nature of the relationships between contextualized and decontextualized language

skills; between language skills and academic achievement in the central content areas; between language skills and specific reading skills (phonics, word recognition, reading comprehension); between language skills and specific writing skills (spelling, punctuation, vocabulary richness, organization, correctness) as well as more holistic measures of writing proficiency; and between language skills and the effectiveness of various instructional formats and instructional materials.

Snow based her research on a working-class Spanish-English Puerto Rican population where there is little formal support for decontextualized skills in Spanish once the child has been mainstreamed into monolingual classes. Her methodology consisted of a variety of formal measures, in addition to classroom observation and experimental manipulation to validate the constructs of the study. Snow's study was conducted in a well-researched population whose linguistic, cognitive, and demographic characteristics have been extensively researched by Hakuta in "The Causal Relationship between Degree of Bilingualism, Cognitive Flexibility, and Social-Cognitive Skills in Elementary Hispanic Children" (NIE Final Report, December, 1984).

In addition, Cascallar investigated cross-language transfer for two levels of linguistic function (syntactic and semantic) in a naming task which involved the reading of lexical items (both in English and Spanish) preceded by related, unrelated, or neutral syntactic and semantic cues. This primary paradigm was used to obtain a measure of level of transfer from L1 to L2 (and vice versa) in second language learners, at various levels of language proficiency. The mean reaction time of the subjects to the various cue-target conditions was

determined. The pattern of these measures, given different intervals between the word pairs, allowed the identification of information processing characteristics of inter-language transfer for the different linguistic levels used. Transfer was measured in terms of the facilitation or inhibition (faster or slower responses in the naming task, when compared to the "neutral" XXX cuing condition) produced at the syntactic and semantic linguistic levels. Several other variables (i.e., age of the subjects, level of language proficiency, language learning strategies used) also had significant effects, and are therefore, included in the study. Recognition tests, based on the stimuli presented, provided additional information regarding the impact of the variables on memory. Several groups of second language learners participated. Preparations for this research included the development of the appropriate hardware and software to conduct the study, as well as the careful preparation of an equivalent and counter-balanced Spanish-English word list.

Several specific questions were addressed in these series of studies: (1) Which are the processing characteristics of across-language transfer for syntactic and semantic levels of analysis?; (2) How does level of proficiency in each language (degree of bilingualism) affect transfer effects?; (3) What are the effects of age and of the language learning strategies on the transfer effects? Answers to these and related questions offer suggestions for the development of educational programs, and for the development of cognitive measures of language proficiency.

The second level of analysis is at that of the group, where Hakuta developed a research design in which transfer of skills taught in the

classroom across languages is systematically assessed. A fundamental assumption in bilingual education is that skills and content matter taught in the native language will transfer to English. It appears obvious that cross-language transfer occurs, and the concept has been utilized in curriculum development (Chamot, 1983), but its characteristics are ill-understood. There is hardly any documentation, other than appeal to intuition, that cross-language transfer occurs.

Descriptive data of such transfer can yield theoretical insights with immediate practical consequences. For example, we expected that cross-language transfer would not be consistent across different kinds of skills (e.g., grammatical concepts, inferential reading skills, and arithmetic). The implication is that different content materials should rely differently on the concept of cross-language transfer. We also expected that cross-language transfer would vary depending on the different background characteristics of the individual, among them their age and their degree of bilingualism (as predicted in Cummins' (1979) threshold hypothesis, where a certain level of bilingualism must be reached before the positive consequences of bilingualism can be attained). Results of cross-language transfer research have direct consequences on educational practice and will enrich theories on cognitive development and education.

From a practical point of view, information about cross-language transfer suggests guidelines for curriculum design. At the same time, information about the extent of transfer at different ages is useful in formulating policy about the kinds of instructional programs that should be supported for students at different grade levels.

The study by Hakuta explored the nature of the transfer of skills across languages. The following questions were asked: How can cross-language transfer of skills be documented? Does the extent of cross-language transfer depend on the skill being taught? Does cross-language transfer depend on identifiable characteristics of the individual student, such as his/her degree of bilingualism and age?

These questions were investigated in the context of the bilingual program in New Haven, CT. The study was similar to Snow's study, but while Snow's work tapped language assessment, Hakuta's work has an effect on curriculum design. Both studies had substantial teacher participation from the very beginning. During the initial orientation period, the project directors for both of these studies worked with the coordinators of Tasks 3 (Professional Development) and 4 (Improvement of Content of Materials, Curriculum and Programs) so that the findings could be rapidly disseminated to these activities.

The third level of analysis was at the level of function. Research at this level was restricted to a set of salient language functions within the classroom. Several of our studies focus on classroom discourse and functional language and provide accounts of significant classroom language features. Thus, they are integrated thematically and share data bases.

Lindholm studied the nature of questions used by both teachers and their language minority students. The use of questions by the students can significantly affect their access to academic knowledge as well as the evaluations of their academic performance. Thus, the understanding of how questions are used in the classroom is important. It is also useful to determine the extent to which questioning skills can be

taught. Teachers' questions are equally important because they may encourage or discourage the use of higher order skills in their students. They also influence the students' access to academic content since the questions must be understood during instruction. Lindholm proposed three studies to address these issues. In her first study, she determined the repertoire of question strategies that language minority students possess. In a second study, she examined the questions that teachers use and the question strategies that are expected of students in different academic areas. Finally, she evaluated her constructs by teaching question strategies to language minority students.

Along similar lines, Simich-Dudgeon investigated characteristics of academic discourse between teachers and students in math and science classes. The focus of this investigation was on the responses of native and non-native English speaking students who were asked to provide factual information or substantiate their responses in these instructional settings. In particular, "successful" responses, according to teachers' evaluations, were examined and their structural and functional features were documented. Simich-Dudgeon also evaluated the use of these features according to individual difference characteristics, including English proficiency, age, socioeconomic status, and cultural background. Her work resembles Lindholm's because teacher questions and student responses are intertwined in the cooperative interactional work that takes place during face-to-face interactions. These studies emphasize the qualitative aspects of the question-answer sequence not just in terms of how they might differ

inside and outside the classroom, but in how they may vary within each of these situations.

The results of the classroom discourse and functional language studies provide important information for educational practice. In the area of professional development, they suggest modifying instructional language behavior in ways that facilitate the acquisition of academic knowledge by language minority students and promote the use of appropriate language in academic contexts. The studies also form the basis for attempts to teach language minority students strategies for verbal interaction which are essential for successful participation in academic learning situations. Thus they affect teacher-training, material development and curriculum design.

During the initial Orientation period, the relationship between Task 5 studies and the studies proposed in Task 2 was explored. For example, Hatch's study of cognitive/language skills in the school setting in Task 2 investigated the transfer of skills across domains within a language. She examined the reciprocity between contextualized and decontextualized language within a language. The studies by Hakuta and by Snow looked at these same questions, but across two languages. Another interface that was achieved between Task 2 and 5 studies was in the training of cognitive skills that was used in Hakuta's transfer of skills study. Also, the literacy study and the dialogue journal work of Task 2 both considered discourse and functional language issues thus were combined with the research efforts described here.

Finally, the three levels of analysis in Task 5 studies--the individual, the classroom, and language function--were integrated

through their "action-oriented" philosophies leading to an attempt to train children in the variables found to be of importance. They have direct implications for several aspects of practice. An understanding of the contextualized/ decontextualized dimension of language leads to improved language assessment procedures and training of these skills leads to better metalinguistic abilities and improvement in abilities whose development required monitored activities. In addition, the transfer of skills study leads to more efficient sequencing of curriculum materials in bilingual instruction; an understanding of question-answer sequences and nonliteral language-use suggests specific ways of organizing classroom activities. In turn, an understanding of how linguistic functions are interwoven into a classroom is gained. These studies also indirectly influence staff development by using teachers in their designs which results in some teacher-training in the areas of assessment, curriculum design and classroom interaction.

List of Projects

Task Coordinator: Eduardo C. Cascallar

Project		
5.1	Cross-Language Transfer of Skills in Bilingual Program Students	Kenji Hakuta
5.3	Contextualized and Decontextualized Language Skills	Catherine Snow
5.4	English Question Strategies in Language Minority Students and their teachers: Effective Question Strategies Underlying Successful Academic Achievement	Kathryn Lindholm
5.5	The Language of Teaching and Learning: Analyzing the Responses of "Good Communicators"	Carmen Simich-Dudgeon
5.7	Syntactic and Semantic Language Processing in Second Language Learners	Eduardo Cascallar

THE NATURE OF THE CROSS-LANGUAGE TRANSFER OF SKILLS

Kenji Hakuta, Project Director

Task 5.1.1

RATIONALE

Bilingual education is founded on the principle that knowledge and skills developed in one language will transfer to the other. The important question for research to address is not the obvious one of whether transfer occurs from one language to another. Rather, research needs to generate a better understanding of how this process occurs, and under what circumstances it occurs most efficiently. Although considerable research exists to show that transfer between L1 and L2 are commonplace, we do not have a detailed picture of the process. The purpose of the research was to provide such a detailed picture.

In the course of our discussions with teachers during the spring of 1986, a number of teachers expressed concern about kindergarten children's mastery of spatial terms not just in English, but in Spanish as well. Expression of spatial concepts is an important aspect of language development. In fact, many speech specialists believe that early control of spatial concepts is good predictor of later language development. Thus, for example, the Boehm Test of Basic Concepts (1986) looks primarily at these concepts in assessing the verbal and conceptual ability of children. Based on a small pilot study with kindergarteners, an experimental study was designed to look at the nature of transfer in first graders.

STATEMENT OF QUESTIONS OR GOALS

The purpose of the experiment was to be as specific as possible about the area of conceptual space over which transfer occurred. As we developed and refined this experiment, indeed, we thought about it more and more as a study testing the limits of detailed specificity in terms of what we mean when we say that there is transfer between L1 and L2. What we decided to ask was at the level of specificity of the following sort: if children are made highly aware and conscious about a particular concept, such as that expressed by "alrededor" ("around") in Spanish, would s/he be better at learning and using "around" in English? Notice that this is quite a different way of thinking about transfer than asking if stronger Spanish skills lead to stronger acquisition of English. The former is a specific way of looking at transfer, the latter is more global and general.

The logic of the experiment was as follows. We decided to train different groups of children in different concepts in Spanish. Following this differential training, all children would be taught a common set of words in English. Some of these English words would cover the same conceptual space as that trained in Spanish for one group of children; other English words would cover the conceptual space trained in Spanish in the other group of children. The question, then, could be asked whether children are better in learning and using the English words for which they had been "primed" in the Spanish training. If this could be shown, then we would have solid evidence for the specificity of transfer from L1 to L2.

METHODOLOGY

We decided to train one group of students on spatial concepts in Spanish, and another group on temporal concepts. We concentrated on terms that our pilot study suggested would cause difficulty. The spatial terms selected were: alrededor/sobre, centro/esquina, cerca/lejos, hacia adelante/para atras, derecha/izquierda, primero/segundo/tercero, and invertido. The temporal terms were: primero/ultimo, antes/ahora/despues, ayer/hoy/manana, pasado/presente/futuro, nunca/algunas veces/siempre, and durante. Besides these two groups who received training on specific Spanish concepts, a third group was selected as a control group, and received no linguistic training. Rather, this group received a self-concept development program.

In terms of specific transfer, then, we predicted that those students who received training on Spanish temporal concepts would learn and use English temporal terms better than those who received training on spatial concepts. Also, we predicted that students receiving training on Spanish spatial concepts would do better on English spatial terms than the temporal group. Finally, both groups were expected to do better than the control, who received no linguistic training.

A total of 68 first graders participated in our study. The children were selected from two pairs of classrooms in two different schools. Within each class, students were divided randomly into the three experimental groups: one which received spatial training, another which received temporal training, and a third which received the self-concept, non-linguistic training (control).

Prior to the actual training, we also administered a pretest to determine the children's levels in Spanish and English vocabulary, and their use of spatial and temporal concepts in Spanish in a variety of tasks. One purpose of the pretest was to see if the three groups, though randomly selected, might differ in their basic abilities in the two languages. They did not. Another purpose was to determine the extent to which English and Spanish abilities influenced the post-treatment scores in English.

The spatial and temporal training component in Spanish had three major goals: first, to review the concepts themselves, that is, to focus on those particular conceptual categories of time and space relations; second, to review the L1 terms which express those concepts; and third, to teach the children to recognize these terms in written form. The second two goals, vocabulary development and word recognition, were aimed at developing aspects of the children's "metalinguistic awareness", i.e., utilizing the distinction between linguistic form and meaning, highlighting the word as a linguistic unit, and demonstrating that written language conveys the same kind of meaning as spoken language. Training was conducted in 30-45 minute sessions in small groups by Margarita Rodriguez Lansberg, a research assistant to the CLEAR project. Each session covered one set of contrasting concepts. Thus, one session, for example, covered primero/ultimo, another covered antes/ahora/despues, and so forth. At the end of each session, an informal assessment was conducted to ensure that the students were in control of the concepts and their written form. The entire training phase covered a period of approximately three weeks.

After the training phase came the English training phase. Here, all children were exposed to the same materials. They were taught the full set of English words corresponding to the Spanish spatial and temporal concepts. The classes were taught, more or less, in a traditional ESL-type context by Laurie Gould and Marcus Rivera, both research assistants to CLEAR. Assessment of learning and use of the English terms was conducted in a group-administered paper-and-pencil test.

RESULTS

From the viewpoint of the advocate of a specificity-oriented view of transfer, the results were disappointing. That is to say, there was very little evidence of the specific transfer of training from Spanish to English. There was one exception having to do with the cognates (presente-present/pasado-past/futuro-future) used in this study. There was good evidence that students transferred training in these cases from Spanish to English. This was particularly true for students whose English level was low. However, in terms of overall results, it is safe to conclude that transfer on the specific level did not occur. We feel confident in making the claim that it did not, because we used a relatively sophisticated experimental design in which we excluded a lot of contaminants that could have muddied our results.

The results, however, were quite encouraging for the advocate of a global view of transfer. Regardless of the training condition, the level of control of Spanish was an excellent predictor of how well the students did on the post-training test. This fact held true even after the students' initial level of English was taken into account. Thus, the study once again turned up evidence for transfer occurring at a

global level, but not at the specific level.

DISCUSSION OF THE EDUCATIONAL OR THEORETICAL IMPLICATIONS AND DEFINITION OF UNRESOLVED QUESTIONS AND PROBLEMS

The study clearly showed that students with high levels of development in Spanish also developed high levels of ability in English. What we failed to demonstrate was that specific development of concepts in Spanish was tied to the learning of those specific concepts in English. Thus, the findings are not consistent with a view of transfer that proceeds step by step, skill by skill, from Spanish to English. Clearly, this finding comes from limited observation of a limited arena of academic learning in these children. Nevertheless, the most obvious implication of this study is that academic programs for these children should be geared towards the holistic development of their native language skills. The general native language base then would result in transfer to English. The study argues against a myopic view of transfer, where each concept in the native language is taught aimed at its transfer to English. To take an analogy from writing instruction, much in the same way that attention to details such as spelling can lead instruction astray from the overall goal of literacy development, we believe that too much attention to specific transferable skills can detract from the overall goal of developing a strong and integrated language arts base in bilingual instruction.

TRANSLATION AS A METALINGUISTIC SKILL

Kenji Hakuta, Project Director

Task 5.1.2

RATIONALE

Among the skills possessed by bilinguals, that of translation is perhaps the most admired by monolinguals. This set of studies investigated the ability of Puerto Rican bilingual children to translate (we use this term generically to cover both translation and interpretation abilities) between Spanish and English. This ability was first called to our attention in one of our brainstorming workshops sessions by Steve Strom, an elementary school teacher in New Haven, who pointed out that he used children who could translate as instructional assistants by pairing them up with monolingual Spanish-speaking children when using English materials. Translation interested us (my collaborators in these studies include Marguerite Malakoff, Laurie Gould, Marcus Rivera, Margarita Rodriguez Lansberg, and Jose Capuras) for two reasons. First, it is a valued skill with high snob-appeal, conjuring up images of international organizations and jumbo jets. And second, the ability to translate well implies a high degree of awareness about the interrelatedness as well as distinctiveness of the languages involved.

STUDY 1: STATEMENT OF QUESTIONS OR GOALS

In our first study, we decided to explore the psycholinguistic properties of translation. As subjects, we selected 4th and 5th graders who had had some experience translating for their relatives and

friends (by parental report). We constructed tasks in which they were to translate words, sentences and stories from English to Spanish and from Spanish to English (in all of these cases, we provided the source in written form on a computer screen, and the children provided the responses orally). Ability to translate was assessed by measuring the time it took to provide the translation, and by analyzing the types of errors made in translation. We also gave them a written story to translate into written form. Finally, we made assessments of their proficiency levels in English and Spanish.

STUDY 1: RESULTS

Overall, the results showed that these children were very good translators. We were interested in the extent to which they made intrusion errors, i.e., where vocabulary or grammatical structures from the source language intrude into the translation. Here are some examples:

Source: La luna blanca brilla en la noche.

Translation:The moon white shines in the night.

Source:Es redonda la mesa y las cuatro sillas son azules.

Translation:It's round the table and the four seats are blue.

Such intrusion errors were infrequent, even when there were ample opportunities for them to occur.

We note that this low incidence of intrusion errors strongly supports the contention of sociolinguists who have studied code-switching (e.g., Zentella 1981) and argued against the belief that it is the result of language confusion. Our subjects amply demonstrated that they could code-switch whenever the situation so warranted, i.e.,

when they were with other Spanish-English bilingual, but almost categorically separated the languages in the translation tasks.

We also discovered some interesting properties about translation efficiency. For example, we were interested in finding out how well the proficiencies in the two languages could predict translation speed. It turns out that what matters in translation efficiency is the proficiency in the language into which the translation is being made. Thus, when translating from English to Spanish, Spanish proficiency is more important, and when translating from Spanish to English, English proficiency matters more. In addition to proficiency in the languages, though, we found that performance on another kind of task mattered even more. In this task, the subjects asked to make a determination as to whether words projected on the computer screen were English or Spanish (we used only words that could not be judged on superficial features such as accents and letter combinations unique to either language). The speed with which subjects could perform this task was an even better predictor of translation efficiency. We believe that this task reflects what specialists in translation have called a translation proficiency, different from the proficiency of the two languages independently. Translation proficiency, we believe, is related in important ways to various metalinguistic skills and is an ability that can be trained through practice and experience.

STUDY 2: STATEMENT OF QUESTIONS OR GOALS

Having found some interesting properties, we then moved on to the question of how widespread this ability might be. In our initial experiment, we did not sample from a random population of bilingual

children, but rather on the basis of what parents told us about their children's abilities. In the next study, we tested 52 fourth and fifth graders from bilingual classrooms, not being particularly selective, and choosing all students who were able, on the judgment of the teachers, to write minimally in both languages. For this study, we did not give them the full battery of tests as in the first study, but rather a simple story translation task going in both directions.

STUDY 2: RESULTS

Below are some examples of translations that we received:

SOURCE

> Los tres ninos jugaban bajo el arbol viejo en la casa de su abuela. Cerca del jardin estaba un perro enorme. El perro salio corriendo y los ninos lo siguieron. Llegaron todos a una vieja casa abandonada. Enraron silenciosamente para buscar al perro. Dentro de la casa oscura, se abrio una puerta con un ruido extrano. Uno de los ninos salto un grito porque tenia miedo. Pero otro de los ninos cirrio hacia la puerta abierta. Alli descubrieron al perro y se fueron todos a su casa.

TRANSLATION 1

> The three boys were playing under an old tree in they're grandmothers house. Near the back hard there was a big dog. The dog came out running and the children ran after him. Then they all got to an old house that was empty. They entered the house silenlli to find the dog. In the old dark house a door opend with a strange noise. One of the boys scrimed because he was scared. But one of the boy's ran to the door that was open. There they

discovered the dog and went home.

SOURCE:

A lonely cat was looking for something to play with. He suddenly saw a baseball. He began to play with it. After a while he got bored, though, and went outside. In a garage he discovered a whole bunch of paper boxes and began climbing them. Inside one of the boxes was his old friend, Fido the dog! Together the two animals played all afternoon. They realized afterwards that they had lost track of time and that it was very late. When the cat got home, he washed up and ate his dinner.

TRANSLATION:

un gato solo estaba mirando a algo para jugar. El derepente vio un juego de pelota. El comenso a jugar, despues un tiempo el se amorinno, penso, y se fue afuera. en un garage el descubrio un bonche de cajas de papel y comenso a treparse por el. Adentro uno de las cajas fue el mayor amigo, Fido el perro! juntos los dos animales jugando al mediodia. Ellos se dieron cuenta despues aqueyo ellos fuero perdidos atrapado el tiempo y despues fue vastante tarde. cuando el gato se fue a casa, el vano ariba y el comio.

Undoubtedly, overlooking minor details of spelling, these are excellent translations, certainly products you would be proud of had these been produced by your foreign language students.

As in the first experiment, we conducted various analyses of errors in the written translation task. We found that errors were roughly comparable in both quantity and quality between the subjects in

the two experiments. For example, in the above stories going from Spanish to English, in the first experiment, there were an average of 1.79 errors attributable to source language intrusions per story and an average of 2.17 errors in the second experiment. Going from English to Spanish, there was an average of 3.23 errors per story for the first experiment, and 2.18 for the second experiment. In general, then, we can conclude that translation skill is widely distributed among the population of bilingual youngsters found in bilingual education programs.

Our comparison of the two populations on this translation task is noteworthy on a further point, which is that in going from English to Spanish, the second experimental group (those in the bilingual program) made fewer grammatical errors overall than did those subjects in the first group (many of whom had been mainstreamed or never been in bilingual programs). This pattern, combined with other information on language use obtained from this population (Hakuta, Ferdman & Diaz 1987), suggests a rather rapid decline of Spanish language skills within this school population.

DISCUSSION OF THE EDUCATIONAL OR THEORETICAL IMPLICATIONS AND DEFINITION OF UNRESOLVED QUESTIONS AND PROBLEMS

The studies suggest that by as early as fourth or fifth grade, probably even earlier, bilingual students are very capable of translation in both directions. We believe that the ability to translate is related to a variety of metalinguistic skills, the delineation of which constitutes our future agenda. We furthermore believe that translation skills can be developed, and can serve as an

effective method of developing metalinguistic skills in bilingual youngsters, and that this would have a positive effect on their literacy skills. Equipped with these observations, we have made some preliminary attempts to develop programs for the training of translation skills, one such effort being the basis for the study titled A Translation Curriculum for Spanish for Spanish Speakers: Issues of Interpretation and Empowerment.

A TRANSLATION CURRICULUM FOR SPANISH FOR SPANISH SPEAKERS: ISSUES OF INTERPRETATION AND EMPOWERMENT

Kay Hill, Project Director

Sheila M. Shannon, Research Associate

Task 5.1.3

RATIONALE

Recent sociolinguistic work has recognized and explored the phenomenon of bilingual language minority children acting as translators for monolingual family and community members (Shannon, 1987). The bilingual children work between Spanish, their native language, and English, their second language and the language they learn in school. Psycholinguistic work has examined the same phenomenon within the context of schooling with a goal of capturing the underlying cognitive as well as linguistic abilities that my be involved (Hakuta & Malakoff, 1987).

Recognizing language minority children's potential for translation, identifying the cognitive and linguistic attributed required to carry out such a task, and incorporating those elements into a language curriculum was the goal of the CLEAR project for the year 1987-88 reported here. The rationale was not only to promote language and related skills through the use of two languages by way of translation, but by so doing provide a relevant curricular approach for language minority students in the spirit of Cummins' (1986) call for minority students' empowerment. Furthermore, the translation curriculum was created by the teacher who subsequently implemented it. Current work in curriculum theory suggests that teachers transform

curriculum as they implement it and that students' responses factor into the transformation (Thornton, 1988). The goal of the ethnographic portion of this project was to document the implementation of the translation curriculum with a critical eye on teacher and student reaction.

STATEMENT OF QUESTIONS OR GOALS

This ethnographic project was guided by questions about assumptions regarding participants' language abilities, attitudes, and experiences that were built into the innovative curriculum. Ongoing inquiry focused on how those abilities, attitudes, and experiences were affected by and interacted with the curriculum. Of particular interest was the extent to which the middle school students involved in the project had acted as translators in their everyday lives. Regardless of whether or not the students had had actual experience as translators, however, of equal interest was their response as bilinguals and as language minorities to translation activities in the classroom. Documenting the teacher's transformation of the curriculum through his own translation and interpretation of the curriculum was also of critical concern to the inquiry.

METHODOLOGY

Standard ethnographic methods were used in this project carried out in a public middle school in the inner city of New Haven, Connecticut. The investigator observed in an eighth grade Spanish language classroom at least three days a week for the entire school year. Observations, semi-structured interviews, discussions, and conversations were captured in fieldnotes and on audiotapes and videotapes. Nine Puerto Rican students participated in the project;

five girls and four boys. All nine students had some bilingual background involving Spanish and English, although their experiences were variable. The nine students were more closely related as to their English proficiency and relatively high academic status rather than to their Spanish language ability. The teacher, Mr. Jose Delgado, was a certified Spanish language teacher for the middle school who developed the translation curriculum along with another Spanish teacher, scholars, and students at Yale in conjunction with CLEAR. Delgado and the ethnographer, Dr. Sheila M. Shannon, collaborated on the analyses of curriculum transformation and participant reaction.

RESULTS

A new perspective on bilingualism surfaced as a result of this project. While all nine students in the class were thought to be bilingual, they were not equally proficient in both English and Spanish. The Spanish language ability of the nine students in Mr. Delgado's eighth grade Spanish language classroom ranged evenly from low to high. In any case, however, all nine students came from bilingual backgrounds; that is, they lived in homes and communities in which Spanish is used extensively, whether or not the individual students themselves used Spanish.

With the range of Spanish ability it was difficult for Mr. Delgado to target the translation activities which call for relatively equal ability in two languages. Mr. Delgado then directed the curriculum to deal with the diversity of students' abilities and to enhance and develop the students' Spanish. Exposure to and manipulation of Spanish literature through translation became Delgado's tack. The students almost uniformly reacted with resistance. Not only

were they resistant to the study of Spanish literature, but Mr. Delgado had to provoke any use of Spanish in the classroom regardless of student ability. Exceptions to this pattern of resistance were the bilingual students, that is, those students with relatively equal ability in Spanish and English. And resistance weakened for all students over time. The one student whose Spanish ability was the lowest relative to the others indicated that translation activities were not appropriate for her given her disparate language abilities. Overall, translation activities were successful at provoking Spanish language use for the bilingual background students.

DISCUSSION OF THE EDUCATIONAL OR THEORETICAL IMPLICATIONS AND DEFINITION OF UNRESOLVED QUESTIONS AND PROBLEMS

The results of this study raise questions about attempts to empower minority, and in this case, language minority students, by incorporating culturally relevant material into the curriculum. The students resisted empowerment through use of their native language, and through the use of its literature. Students expressed confusion about the paradox the innovative curriculum presented. They questioned why the curriculum launched an intensive effort for the use of Spanish in the classroom and on an equal basis with English through translation when messages they receive powerfully suggest the opposite. Through transitional bilingual education and rewards for academic achievement in English-only classes boldly underlined with a current national movement for English-only in this country, the students had understood that loss of Spanish and replacement with English is the expectation and the requirement for success.

The status of the Spanish language, or any minority language, relative to that of English must be understood and recognized when attempts are made in schools to use those languages. The bilingual backgrounds of language minority students need further exploration, particularly the extent of native language loss and the beliefs and attitudes that accompany that loss. Assumptions about Spanish language proficiency and use in this country stand closer examination, thereby informing educational decisions regarding attempts to promote Spanish and bilingualism in the schools.

REFERENCES

Cummins, J.(1986). Empowering Minority Students: A Framework for Intervention. Harvard Educational Review. 56. 18-36.

Hakuta, K. & Malakoff, M. (1987). Translation Skills in Bilingual Children. P Paper presented at the meeting of the Society for Research in Child Development. Baltimore.

Shannon, S.M. (1987). English in El Barrio: A Sociolinguistic Study of Second Language Contact. Unpublished doctoral dissertation: Stanford University.

Thornton, S. (1988). Curriculum Consonance in United States History Classrooms. Journal of Curriculum and Supervision. 3. 82 -100.

I. Contextualized and Decontextualized Language Skills

Catherine E. Snow, Project Director

Project 5.3

II. Rationale:

The project was designed with three specific aims in mind:

1. To explore the relationship between contextualized and decontextualized language skills, and the relationship of both types of language skills to academic achievement, in particular to reading, writing, and reasoning skills.

2. To compare the patterns of relationships among these language and academic skills found in two populations: a population of 'elite bilingual' children experiencing additive bilingualism as a result of exposure to English as a curricular language and to French as a foreign language, and 'folk bilingual' population of Puerto Rican children experiencing attrition of the home language under the influence of their school's bilingual program.

3. To examine developmental differences in the relationships between oral language skills and school achievement, in light of the fact that classrooms increase their demands on children to understand and to produce decontextualized language as the children get older.

In pursuit of these aims, data already collected from children attending the United Nations International School UNIS in Manhattan have been analyzed, a large corpus of new data has been collected from Puerto Rican children in New Haven, CT, and some analysis has been carried out as well on the New Haven data. The following specific studies have been completed.

The development of definitional skill. Developmental analyses of children's ability to give formal definitions have been carried out on both UNIS and NH children, formal definitional skill has been related to other measures of school achievement and of literacy, definitional skill has been compared across the children's two languages, and the English definition skill of UNIS and NH children has been compared. The results (see Snow, Cancino, Gonzalez, and Shriberg, in press; Snow, 1988a; Snow and Cancino, in press; Velasco, 1987) suggests the following conclusions: skill at giving formal definitions, even for very simple and well-known words, increases from grade 2, leveling off somewhat at grade 4 for the UNIS children but not for the NH children, who by grade 6 reach approximately the levels of skill in English that UNIS children achieve by grade 4. These UNIS-NH differences confirm earlier findings on social class differences in definitional skill (Dickinson and Snow, 1987) and earlier findings concerning relationships between vocabulary and reading (Snow, 1988b). Performance in Spanish and in English was quite similar for UNIS 3rd and 5th graders, but performance in English was in general much superior for the UNIS children to their performance in French, taught the ... as a foreign language. However, a few children (about 10% of the sample) achieved levels of performance in French comparable to their skills in English; these children can be viewed as unusually successful foreign language learners. In extremely proficient bilinguals, definitional skill has been found to be related across languages (Davidson, Kline and Snow, 1986). For both UNIS and NH children, performance on the task of giving formal definitions was related to their performance on literacy tasks and achievement tests

(Snow et al., in press; Velasco, 1987). Skill in giving informative, communicatively effective nonformal definitions showed neither developmental effects nor any relation to literacy.

Picture descriptions, orally and in writing. Analyses of oral picture descriptions by UNIS children have shown that, whereas there were no differences among native English speakers and children from non-English speaking homes on the task of describing the picture to a physically present, responsive adult, describing the picture 'so someone who has never seen it could draw it' showed group differences in linguistic markers of planning, and in referential errors. Even children functioning at extremely high levels in a challenging private school curriculum needed several years of exposure to English to perform on this more difficult task in ways indistinguishable from native speakers. Performance on the picture description task showed interpretable relationships to performance on the definitions task (Ricard and Snow, 1988). Written picture descriptions produced in Spanish and English by the NH children were analyzed for linguistic complexity and semantic completeness. It was found that children whose oral language skills were classified as good in Spanish but poor in English performed in ways indistinguishable from children classified as good in both Spanish and English, and much better in English than children classified as poor in both languages (Lanauze and Snow, 1988). The results are interpreted as support for the hypothesis that decontextualized language skills are separable from oral interactive skills, and that transfer from L1 to L2 can occur readily for decontextualized skills (Snow, 1987).

Conversational skills. The specific conversational behaviors that related to overall global ratings of success in a challenging conversational task were analyzed, using transcripts from UNIS children performing in French (a foreign language for most of them). It was found that performance on the global ratings was only moderately predictable from the amount of exposure children had had to French outside school. Skill responding to the interlocutor and in posing questions related to the interlocutor's previous utterance were particularly strongly related to global ratings. Grammatical correctness and fluency were not related to the global ratings at all. Performance on the conversation task was only very loosely related to performance on a written picture description task in French, indicating that success in the conversation task was partially determined by French achievement but was in addition determined by nonlanguage-specific conversational strategies (Snow and Dolbear, 1988). Analyses of the conversation task by the same children in English (currently underway) will enable us to test this hypothesis.

Oral language skills and verbal reasoning. Ninety-seven NH 3rd through 6th graders were tested in English and Spanish, on 10 syllogisms and using the definitions and picture description task. Reasoning skills appeared superior in Spanish, both in terms of solution accuracy and in terms of the sophistication of the explanation given for the solutions. In Spanish solution accuracy related to performance on the definitions task, whereas in English it related to the use of linguistic markers of orientation toward the listener. Form of the syllogism was the most important determinant of success in solving it in both languages, performance improved in both languages

with age. The extremely similar pattern of results in both languages, coupled with the apparently greater sophistication in reasoning skills displayed in Spanish by children of all ages, suggests the value of teaching and testing certain kinds of material in the native language for several years after first exposure to bilingual education (Koopmans, 1988).

I. Question Strategies in First and Second Languages

Kathryn J. Lindholm, Project Director

Project 5.4

The purposes of this project were to investigate the process of question development and metalinguistic awareness in question use. This project involved three separate, but related, studies, each of which will be described below.

Study #1

The purpose of the first study was to provide a framework for understanding the process of question development in a second language. To accomplish this purpose, the questions of four children who differed in English language proficiency (2 limited English speakers, 2 fluent English speakers) were examined to determine how question use may change as a function of English language proficiency. This study used existing data collected by the National Center for Bilingual Research to determine variables associated with the development of English questions in second language learners of English. The frequency with which various types of syntactic structures, pragmatic functions, and semantic functions appeared in the children's questions were reported.

There were a number of interesting results that showed changes in question use with increased English proficiency. Findings about these ESL children's questions showed that these children have a number of grammatical devices for constructing questions, although the questions may not be syntactically complex. These ESL children can use questions for obtaining a diverse amount of information, from classifications, to labels, location, and rules and so on. However, these questions are

largely related to physical objects. Requests about people's activities, knowledge and feelings develop with increased English proficiency. These children, however, asked few questions about reasons or causes for actions or events. More information is needed about whether this lack of causal explanation questions is due to a situation that does not require this function or because these children do not have the linguistic skills to participate in a more abstract conversation.

Findings also indicated that the depiction in the literature that action/intention semantic contexts appear later than classification and description semantic contexts were explained by showing that the actions/intentions contexts were more likely to be produced with more complex syntactic structures and verbs, whereas the classification and description contexts were more often constructed with simpler syntactic structures and verbs. It was concluded that the results provide evidence for a relationship between semantic context and linguistic complexity.

Study #2

The purpose of this study was to collect new longitudinal data to validate the process of development identified with the small sample in Study #1 and to provide information on second language question development in two groups of second language learners: native English speakers learning Spanish and native Spanish speakers learning English.

A total of 32 kindergarten and first-grade students were followed for the first phase of the longitudinal study. The students were selected so that there were 16 pairs (10 kindergarten and 6 first

grade) consisting of one Spanish speaker and one English speaker. The students were matched for metalinguistic ability using their scores on the Woodcock-Johnson Antonyms-Synonyms subtest. Each student was administered the Questions Elicitation Task in the Spring of 1987. Also, the students were observed in social studies, reading and mathematics contexts monthly to collect the longitudinal question use data.

The students were observed in the classroom monthly and all questions produced in the second language were recorded. The data were to be analyzed using the coding system discussed in Study #1 and a similar coding for Spanish questions developed for this project. The Spanish coding system was developed to correspond as much as possible to the English coding system and was based on a longitudinal study of spanish question development in bilingual children (Padilla & Lindholm, 1976 a,b).

The number of L2 questions was so low that analyses could not be conducted as planned. This study demonstrated two important points. First, the few L2 questions produced by the children were consistent with the findings presented in study #1. Second, children in their first year of language learning are much more likely to initiate questions in their first language than their second language. Thus, naturalistic observations may not be totally appropriate if students are observed in the classroom, where interaction is usually more limited. Further, elicitation methodologies may be necessary to collect adequate samples of these children's questions.

Study #3

This study designed a two-part elicitation technique to ascertain

children's ability to: (1) produce questions in their first and second language, and (2) use their metalinguistic skills to judge questions in both L1 and L2 that were either semantically anomalous, syntactically anomalous, or correct.

A total of 83 kindergarten and first-grade students participated in study #3 (16 native English- and 21 native Spanish-speaking kindergartners, 10 native English- and 36 native Spanish-speaking first graders).

The elicitation task was much more effective in obtaining questions in L2. Findings from the question development section indicated that, not surprisingly, all children were competent at producing questions in their native language and that children demonstrated differing levels of ability in producing questions in their second language. The production errors were consistent with developmental sequences in L2 question development as reported in study #1 and as reported in the question development literature.

The metalinguistic skills were examined within a theoretical framework involving two intersecting dimensions of cognitive control and analyzed knowledge (Bialystok and Ryan, 1985). Cognitive control was manipulated by providing students with stimuli requiring three levels of control: correct, semantically anomalous, and syntactically anomalous. Analyzed knowledge was manipulated by providing stimuli in the first and second languages. Also, the analyzed knowledge of the student varied with respect to grade level, amount of schooling in L2, and exposure to analyzed knowledge regarding L1 in the home. Results showed that the hypotheses formulated regarding the influence of cognitive control and analyzed knowledge on student performance were

upheld. The results were discussed with respect to the theoretical significance and in terms of their implications for language development. One important implication was in demonstrating that English speakers outscored Spanish speakers in the question type requiring high cognitive control but Spanish speakers outscored English speakers in the question type representing low cognitive control. This result was interpreted within the context of the literature that discusses the greater analyzed knowledge relative to their first language of English speakers in comparison with Spanish speakers. It was suggested that the results pinpoint the weakness in analyzed knowledge as residing in the semantic domain, a result which is consistent with other literature (e.g., Cummins, 1979; Snow et al., 1987) on the importance of word meanings and rich semantic networks in the relationship of metalinguistic skills to literacy. This result seems especially plausible in light of the absence of syntactic score differences for Spanish and English-speaking children. Thus, the results suggest that the Spanish-speaking children may have had less exposure to analyzed knowledge that supports the development of elaborated semantic networks, which are critical to literacy development.

Project 5.5: Academic Language Talk: Significant Features in the Responses of L1/L2 "Effective Communicators"

Project Director (August 1985 - November 1987): Carmen Simich-Dudgeon

Project Co-Directors (December 1987 - May 1988): Lynn McCreedy and Mary Schleppegrell

Status: Terminated, end of Year 3

Rationale

This study comes from an emergent educational-linguistic research tradition which contends that there is a need for careful qualitative study of the communicative processes of teaching and learning to supplement quantitative information on educational outcomes, such as test scores. The rationale for this study is threefold: 1) Face-to-face spoken communication between teacher and students is basic to the accomplishment of teaching and learning. As Philips (1970) notes, literacy skills "are developed through verbal interaction between teacher and students," and moreover, "in class, speaking is the primary mode for communicating competence in all areas of skill and knowledge which schools purport to teach" (p. 79). 2) Classroom talk has its own conventions for when and how to speak (Edwards and Furlong, 1978; Mehan, 1979; Green, 1982; Simich, 1984). 3) To succeed in American schools, students who are not native speakers of English must become proficient not only in the English language, but also in the communicative norms of the American classroom; teachers can also adjust their practices to accommodate students' differing communicative styles (Philips, 1985; Heath, 1983, 1986; Scollon and Scollon, 1984; Jordan, Au, and Joesting, 1983).

Project Goals

This study's main goal was the identification of salient features of the verbal academic language competence/performance of both native and nonnative English speaking students who are considered "effective communicators/responders" in third and sixth grade math and science classes. A particular focus was placed on teacher-student communication during Verification of Learning activities (VOLs), which are segments during the lesson when the teacher checks student learning through one or more series of topic-related question-response-evaluation exchanges (each series is termed an Interactive Task, or IT) (Simich, 1984). Effective communication skills are crucial for language minority students in these contexts, since teachers evaluate how much students have learned in part by how well (in the teachers' perception) they communicate their knowledge.

Methodology

Seven collaborating teachers in Fairfax County, VA (four third grade and three sixth grade teachers) identified the subjects for classroom observation and videotaping, selecting students at the extremes of a continuum: on one extreme, the "effective responders" (or "er"s), whose responses during VOLs in math and science lessons were considered to be dependably good; and on the other extreme, the "unsuccessful responders" (or "ur"s), whose responses during these VOLs were deemed consistently lacking. Teachers were encouraged to include nonnative English speaking students who they felt validly fell into either category. The following table gives information on student subjects for the two school years during which data were gathered:

	3rd Grade			6th Grade		
	er's	ur's	Total	er's	ur's	Total
1985 - 1986:						
Native Speakers of English	10	10	20	15	9	24
Nonnative English Speakers	9	8	17	2	1	3
All Students	19	18	37	17	10	27
1986 - 1987:						
Native Speakers of English	21	12	33	9	8	17
Nonnative English Speakers	7	5	12	2	2	4
All Students	28	17	45	11	10	21

Three types of data were collected: (1) systematic observations of science and math lessons; (2) interviews with participating teachers and students and a follow-up teacher questionnaire to elicit their metacognitive insights about the salient features of successful VOLs; (3) videotapes of teachers engaging in science and math VOLs with subject students.

Analysis of the metacognitive data yielded a set of features of "good" responses (e.g., they are correct, include descriptive detail, and are given without hesitation), organized along dimensions of cognitive, interactional, and linguistic characteristics. This metacognitive framework formed the basis for the discourse-interactional analysis of actual classroom interaction (as videotaped).

From the videotaped data, "extended" Interactive Tasks (i.e., those which included follow-up questions) were selected for discourse-interactional analysis. The resulting database: (1) gives representation to both subjects (math and science) at both grade levels (third and sixth); (2) includes ITs in

which nonnative speakers (both "er"s and "ur"s) participated; (3) includes ITs in which students' responses were praised (and were thus particularly successful), as well as flatly rejected (and were thus particularly unsuccessful); (4) includes ITs in which one or more features of "good" responses (as identified by the metacognitive data analysis) played a salient role in the success (or lack thereof) of the teacher-student interaction.

The discourse-interactional analysis was conducted on two levels--essentially, on a broad level and on a detailed level. The broader analysis focused on the topical and functional aspects of VOL Interactive Tasks, and on developing a consistent yet sufficiently flexible definition of the Interactive Task as a unit of classroom discourse analysis. The more detailed analysis examined the specific linguistic and interactional characteristics of the turns-at-talk within each Interactive Task under consideration. Certain basic concerns underlie both analyses: both deal centrally with topical development and speaker intent, as they affect teacher-student verbal academic communication.

Results

Because of the unexpected withdrawal of funding for this study before it was completed, the discourse-interactional data, though analyzed, remain uninterpreted with respect to the main goal of the study. Preliminary indications are that success in VOL ITs is essentially dependent on the student's knowledge of American classroom interaction norms, and his or her ability to co-construct this type of classroom discourse with the teacher. The successful responder, it would seem, must not only give the type of response characterized by those features isolated in the metacognitive analysis, he or

she must also be adept at discerning the teacher's intentions, discourse-structural organization, and pedagogical goals.

A teacher idea handbook (titled Helping Limited English Proficient Children Communicate in the Classroom) reached the draft stage of development. (Further revisions have been made without OERI support, and the National Clearinghouse for Bilingual Education is publishing it.) Comprised of nineteen "capsules" addressing specific issues, it contains practical suggestions for teachers on how to maximize the participation of LEP students in VOL class discussions.

Discussion

The most important educational implication of our work is that teachers need to be aware that they do have standards for student responses, and that all students, but especially LEP students, could benefit from explicit teaching of these standards. Whole-class VOLs do not seem to encourage the development of verbal academic language competence; most responses were single noun phrases or calculations, and a limited number of students volunteered. Teachers can encourage expanded responses through higher cognitive follow-up questions, which should not be directed only to the "effective responders." Another way in which verbal academic language can be developed is through conducting more small group or pair review discussions, in which students take turns composing questions as well as responses. These and other issues and suggestions are discussed in our handbook.

The most important unresolved issue in our study is that of the relationship of standards for the "good response" to teachers' evaluations of responses during classroom interaction. Teachers told us that they sometimes "suspend" the requirements for acceptability (other than that for basic factual

accuracy, as with calculations) in responses from students who are not generally successful in VOL interactions. This points to a need to examine the relationship among student categorization (as "effective" or "unsuccessful" VOL responder), quality of response (in terms of content, linguistic, and interactive features), and teacher evaluation of those responses.

Another unresolved issue is that of the role of English proficiency of nonnative English speaking students, and the degree of English linguistic competence which is prerequisite to effective class participation. Although teachers told us they do not consider linguistic issues important unless they interfere with the basic information flow, it is not clear what level of proficiency in comprehension and speaking would be minimally sufficient. There are a few instances in our data in which incorrect responses by nonnative English speaking students may be the result of comprehension difficulties at the discourse level.

In science lessons, two important (and related) teacher-based problems merit further investigation. In VOL question-response interactions during science lessons, teachers tended to do the higher cognitive work of comparing, explaining, analyzing, summarizing, etc., merely eliciting agreement or labels from students. Teachers also at times included unclearly expressed and/or inaccurate information in their questions, evaluative comments, and "explanatory" expansions of students' responses. Both problems put any student at a disadvantage, as far as the development of a coherent body of scientific knowledge is concerned. For the nonnative English speaking student, the risk of incomplete or inaccurate learning is even greater. That these problems occurred with experienced, generally skilled teachers indicates that they are probably widespread. Further research into the interplay between curricular

materials and teacher-student communication about these materials could lead to improved elementary science teaching.

References

Edwards, A. D., & Furlong, V. J. (1978). The language of teaching. London: Heinemann.

Green, J. (1982). Research on teaching as a linguistic process: A state of the art (NIE P-81-0084). University of Delaware.

Heath, S. B. (1983). Ways with words: Language, life, and work in communities and classrooms. Cambridge: Cambridge University Press.

_____. (1986). Language learning is cultural learning. In California State Department of Education, Beyond language: Social and cultural factors in schooling language minority students. Los Angeles: California State University.

Jordan, C., Au, K. H.-P, & Joesting, A. K. (1983). Patterns of classroom interaction with Pacific Islands children: The importance of cultural differences. In M. Chu-Chang & V. Rodriguez (Eds.), Asian- and Pacific-American perspectives in bilingual education: Comparative research (pp. 216-242). New York: Teachers College Press.

Mehan, H. (1979). Learning lessons: Social organization in the classroom. Cambridge: Harvard University Press.

Philips, S. U. (1970). Acquisition of rules for appropriate speech usage. In J. E. Alatis (Ed.), Twenty-first Annual Round Table on Languages and Linguistics: Bilingualism and Language Contact: Anthropological, Linguistic, Psychological, and Social Aspects (pp. 77-101). Washington, DC: Georgetown University Press.

_____. (1985). Indian children in Anglo classrooms. In N. Wolfson & J. Manes (Eds.), The language of inequality (pp. 311-322). New York: Mouton.

Scollon, R., & Scollon, S. B. K. (1984). Cooking it up and boiling it down: Abstracts in Athabaskan children's story retelling. In D. Tannen (Ed.), Coherence in spoken and written discourse (pp. 173-197). Norwood, NJ: Ablex.

Simich, C. (1984). A sociolinguistic investigation of the structure of sixth grade science and arts lessons with particular attention to Verification of Learning activities. Doctoral dissertation, Georgetown University, Washington, DC.

I. Syntactic and Semantic Processing in Second Language Learners

Eduardo C. Cascallar, Project Director

Project 5.7

II. Rationale of the Project:

A review of the language processing literature shows that several factors have been found to have an effect on word recognition type of tasks during on-line processing of speech in monolinguals. Some of these factors include word length, word frequency, frequency of the first syllable, syntactic and semantic context, etc. (Cascallar, 1985; Blank, 1980; Foss & Blank, 1980; Grosjean, 1980; Marslen-Wilson & Welsh, 1978; Mehler, Segui, & Carey, 1978; Foss, 1969). Also, several models have attempted to describe the process of lexical access and the organization of the internal lexicon (Morton, 1969; Foss & Blank, 1980; Forster, 1979, 1981).

On the other hand, very little is known about lexical access and processing in bilinguals. The dichotomy between the studies that favor either the presence of one or two lexicons in bilingual subjects is probably due to a confounding with the tasks used to investigate the issue (Paradis, 1978; Kolers & Gonzalez, 1980; Grosjean, 1982). Paradis (1981) has proposed a model with two lexicons for the bilingual, where both lexicons are differentially connected to a memory store with language-free mental representations.

It is assumed that bilinguals access their two language lexicons during word recognition as a function of the speech mode

they are in (Soares & Grosjean, 1984). This requires a deactivation mechanism which led to studies investigating a monitoring system or a language switch (Macnamara, 1967; Obler & Albert, 1978; Paradis, 1980). But, bilinguals rarely deactivate the other language completely when in a "monolingual" speech mode, and various approaches have found evidence for the presence of only partial deactivation: cross-language Stroop tests (Obler & Albert, 1978; Preston & Lambert, 1969), lexical decision tasks (Altenberg & Cairns, 1983), and comprehension tasks in a phoneme monitoring paradigm (Blair & Harris, 1981). More recent research by Soares & Grosjean (1984) suggests that bilinguals always search both lexicons when confronted with a letter-string which does not correspond to a lexical item (nonword), even when in a "monolingual mode", and that bilinguals always search the base-language lexicon first.

Studies which examine reading performance, and the underlying processes in memory among bilinguals, have found that reading may be slower in the second language for reasons not related to knowledge of vocabulary and syntax (Favreau, Komoda, & Segalowitz, 1980; Favreau & Segalowitz, 1982, 1983). There are indications that this effect may be due to reduced sensitivity to orthographic, syntactic, and semantic redundancies of the language (Favreau et al., 1980; Hatch, Polin, & Part, 1974), and to differences in the automatic and controlled processes used by bilinguals depending on their reading performance and skills (Favreau & Segalowitz, 1983). The effect of context is a very

relevant issue in the understanding of language processing in general and of bilingual subjects in particular.

It is crucial to examine procedures for identifying the meaning of what "being bilingual" is in terms of the processing of semantic and syntactic information at the level of the individual student. A main concern of this study is to determine the differential effects of facilitation and interference found at the syntactic and semantic linguistic levels of analysis. Extensive reviews of this area of research can be found in McLaughlin (1978), and Grosjean (1982). From previous research it is expected that degree of interference between languages depends on the linguistic level used (i.e., syntactic, phonologic, semantic). It is precisely this differential pattern and the processing phenomena that explains it, that is in part the focus of this research. Also, in relation to concerns at the level of the conceptual system of the bilingual person, and regarding the representation of both languages in the cognitive system, this study is based on extensive previous research reviewed elsewhere (McCormack, 1977; Grosjean, 1982; Paivio and Desrochers, 1980). The human information processing approach can provide useful information on these issues. In particular, the tasks used in this study, which involve reading, permit the experimental examination of this most relevant skill in bilingual language learners. The analyses is as a function of the transfer across languages of several related skills incorporated in the complex task of reading. The effects of context, and of the

lexical, phonological and orthographic characteristics of words is examined.

III. Statement of Questions Addressed:

Several specific questions were addressed in this study: (1) Which are the processing characteristics of across-language transfer for syntactic and semantic levels of analysis?; (2) How does level of proficiency in each language (degree of bilingualism) affect transfer effects?; (3) Which are the effects of age of the subjects, and of the language learning strategies they use, on the transfer effects? Answers to these and related questions are expected to offer relevant suggestions for the development of educational programs, and for the development of cognitive measures of language proficiency.

IV. Methodology

Subjects: A total of 72 subjects participated in the study. This total of 72 subjects was divided into two experimental groups of 36 subjects each. These two groups were determined according to the native language for each subject (English or Spanish), and all subjects must have learned the other language after age 14, in an academic setting. The level of proficiency in both L1 and L2 was determined from the subjects' self-ratings, for various language skills, according to a scale developed at the University of California, Los Angeles. Equivalent designs were used to investigate the two languages involved in the study. Each subject was randomly assigned to a different stimuli set,

and was individually tested. All subjects had normal or corrected to normal vision, and had a university level education.

Apparatus: An IBM Portable Computer was used to present the stimulus materials. All characters were presented on the display screen in upper case graphics mode. Each subject viewed the stimuli at approximately 75 cm from the screen, and seating arrangements were such that they maintained a constant viewing distance, so that the subtended visual angle on the retina would also be constant. All sources of light in the testing room were masked. A dual channel voice-response time control, consisting of a voice-activated relay and a contact- microphone, was be used to signal the onset of a subject's vocal response to each target word presented. The contact-microphone was fastened around the neck of the subjects, pressuring slightly to achieve maximum sensitivity. The output from the voice reaction time control was fed into an interface card, specially developed for this study, added to the computer system.

Materials: All target words used in the study were selected from extensive published normative data, both for Spanish and English. Length of the selected words, both as regards number of syllables and number of letters, was controlled. Given the results of previous studies, several other variables were also controlled for or counterbalanced in the study:

Experimental Variables

All previous variables were either counterbalanced in the design, or used for statistical control of the effects. Whenever possible, their values were examined for the different

groups in order to obtain equivalent experimental conditions, not affected by the effects previously mentioned in the description of them. These values were also used in multiple regression analyses on the reaction time (RT) data, providing in this manner for another form of statistical control of their participation in pronunciation latency effects, since it was not always possible to include them in a carefully balanced experimental design.

The following variables, on the other hand, were directly manipulated to determine the experimental conditions in the repeated measures factorial design which is central to this study, and constitute the variables used in the design for the analyses of variance procedures carried out:

1) Word Pair Languages (WPL): This variable is defined with four levels, which describe the possible language pair compositions for each cue-target word pair. These four language pairs represent all combinations of L1 and L2 (English and Spanish) for the subjects in the study. For example, for those subjects in the English native speakers group, the conditions were: (a) L1 (cue) / L2 (target) (i.e., CHAIR - MESA); (b) L2 (cue) / L1 (target) (i.e., SILLA - TABLE); (c) L2 (cue) / L2 (target) (i.e., SILLA - MESA); and (d) L1 (cue) / L1 (target) (i.e., CHAIR - TABLE). For the native Spanish speakers group, L1 and L2 labels are reversed, of course. These conditions represent the two directions in which the activation transfer effects were studied. All word pair conditions were counterbalanced in terms of word-length (WLT), resulting in cue- and target-words with equal number of items of five, six, seven,

and eight letters in length (in each language). The number of syllables was also matched. All practice items had the same general characteristics as the experimental items.

2) Context Level (CXL): Two context levels are defined, "syntactic" (SYN) and "semantic" (SEM), respectively. The SYN level is defined as that which is represented by word pairs where the word prime is primarily a syntactic cue for the part of speech the target word belongs to (i.e., MI - PENCIL; YOUR - LIBRO). The SEM level is defined as that which is determined by word pairs where the prime primarily provides information extracted from the representation of its meaning in memory (i.e., FRUIT - LIMON; VIDRIO - WINDOW). As it will be shown later, this meaning could be related or unrelated to that of the target word; equivalently, for the SYN level, the syntactic cue could prime the related or an unrelated syntactic category of the target word.

3) Word Pair Relatedness (WPR): This variable is applied for both syntactic and semantic conditions, with three levels: a) related (REL), b) unrelated (UNR), and c) neutral (NEU). At the semantic level, for each of the target words used in the study, two word primes are selected, one chosen as semantically related to the target word, and the other being semantically unrelated (i.e., AGUA - RIVER; and FLOWER - RIO, respectively). The length in letters of both priming words is always the same for any given target word. Care was also taken to avoid, in as many instances as possible, having either of the primes begin with the same letter as the target. Semantic relatedness was

established by means of dictionary definitions which were then evaluated by six independent judges, fully bilingual in both languages involved in this research. Unrelated words were chosen at random from dictionary entries, and then had to be considered as truly unrelated by the same independent judges.

At the syntactic level, the related condition was determined by an appropriate syntactic correspondence between cue and target words, pairs which constitute a grammatical sequence in the languages being considered (i.e., YOUR - LIBRO). The unrelated condition for the syntactic level was established by word pairs which do not have an appropriate grammatical correspondence in the languages used (i.e., HIS - CORRO).

In addition to the "related" and "unrelated" levels, the neutral condition was established to serve as a baseline measure. Following an approach previously used by several researchers (i.e., Posner & Snyder, 1975a; Neely, 1976, 1977), all the target words will also be presented preceded by a semantically and syntactically neutral prime consisting of a series of Xs (i.e., XXXX - LIBRO; XXXX - BOOK). The importance of including this neutral prime is that it provides a baseline for the assessment of the limited-capacity attentional effects and the spreading activation effects produced by the REL and UNR primes, with their warning signal effects (Posner & Boies, 1971) partialled out. In terms of the proposed cost-benefit analyses, in line with the methodology proposed by Posner & Snyder (1975c), this research strategy enables the evaluation of facilitatory and inhibitory effects in word target processing.

4) Stimulus Onset Asynchrony Interval (SOA): The SOA between prime and target words was represented by a short (250 msec) and a long (650 msec) interval. Presentation of the prime was always held constant at 120 msec, in order to always maintain a consistent activation level. Therefore, variation actually took place between interstimuli intervals (ISI) that were 130 msec and 530 msec long, respectively. The selected intervals were arrived at based on assumptions of the ACT* model (Anderson, 1983, 1984), and on pilot testing conducted prior to this experiment.

Design

This study involves the collection of pronunciation latencies (PL) for each of the 288 target words presented to each subject. A 4x2x2x2 factorial design with repeated measures was used for the analysis of each of the native language groups. These four variables are within-subject factors. Later, the two language groups were compared, including Native Language Group (NLG) as a between-subject factor to compare the native speakers of each of the two languages in the study, across all the experimental conditions.

V. Results:

Major results from this series of studies can be summarized by the following:

A series of interrelated psycholinguistic studies have provided valuable information regarding syntactic and semantic

language processing in bilingual and monolingual subjects. They have also provided a better insight into the characteristics of language memory structures and functions.

1) Results confirm that data-driven tests of memory (e.g., tests of repetition priming) are more language-dependent than are conceptually driven tests (e.g., recognition memory tests), even when encoding conditions are held constant. Thus, it seems reasonable to suggest that bilingual subjects are less likely to show transfer from one of their languages to another, when a data-driven test of memory is used, compared to when a conceptually driven test is used.

2) It can be concluded that demonstrations of language-dependence and language-independence that have been held to support dual- or single-code models of memory representation in bilinguals, do not in fact offer unequivocal support for one or the other position. This indeterminacy is due both to a failure to consider the different retrieval demands of various memory tests, as well as to the effects of differential sensitivity to translation nonequivalence in the tasks utilized in the literature. New studies will have to consider these findings.

3) Results from the study of activation patterns in the memory of bilinguals have presented a consistent picture of the time-line followed by the processing of verbal materials. In a design that included native speakers of two languages, it was evident that when transfering priming effects across languages, syntactic cross-language activation was more efficient than

semantic activation transfer, if the direction went from the less dominant language to the dominant one. A reversed effect was observed for the opposite condition. In general, the results support the functional differences between syntactic and semantic memory, and suggests different processing and acquisition patters.

VI. Discussion:

This study examined the process of cross-language transfer for two levels of linguistic function (syntactic and semantic), as a measure of level of transfer from L1 to L2 (and viceversa) among adult second-language learners. The characteristics of this process were studied in a well-defined experimental task, and the findings were analyzed together with the data provided by learning strategies instruments, and with other information such as degree of language proficiency in L1 and L2, recognition data, etc. Results from the study include implications for training students in linguistic skills, and in learning strategies which are crucial for these and other academic endeavors. Other products are the implications of these results for language learning.

TASK SIX

TASK 6 Synthesis: 1-17-89

Second Language Instructional Programs

The five studies in Task 6 focused on various aspects of second language instructional programs in U.S. elementary and secondary schools. The overall goals of the task were to: (1) identify promising language learning models for use in elementary and secondary schools; (2) carry out the necessary research to determine which of these are the most effective model(s) in terms of pedagogy and amount of time allotted to language study; (3) examine the relationship of student and teacher characteristics to effective second language learning; (4) gather information on curriculum, materials, teacher training, and other teaching aspects that are relevant to various teaching models; (5) disseminate this information to the field in the form of print materials and preservice or inservice training programs; and (6) develop accurate and valid assessment methods for elementary school programs.

In order to gain a greater understanding of the patterns of current teaching practices on a country-wide basis, a comprehensive **National Survey of Elementary and Secondary Foreign Language Programs** was conducted as the first study in Task 6. The main purpose of the survey was to provide a national picture of foreign language education. The survey, which was sent to 5% of all public and private elementary and secondary schools in the nation, gathered information on demographics of the schools, amount of foreign language instruction, foreign language course offerings, foreign language curricula, teacher qualifications and training, and major problems identified by the administrators and teachers. Major findings included the following: one-fifth of the elementary schools and 87% of the secondary schools reported teaching foreign languages; the top four

languages taught were Spanish, French, German, and Latin; the majority of the elementary programs did not have overall proficiency as a goal; and the secondary teachers were more frequently certified than the elementary teachers.

The results of the survey showed the lack of immersion programs at the elementary level, and underscored the need for research into the exact nature of immersion methodology. The study **Definition of an Immersion Methodology** was undertaken to focus on immersion methodology and teacher preparation in the American setting and to promote professional and program development in existing programs. This was accomplished by: determining the basic assumptions and practices of immersion methodology, preparing a handbook for immersion teachers, and disseminating the handbook to immersion programs across the country. The major outcome of this study was the **Immersion Teacher Handbook** by Marguerite Ann Snow (CLEAR Education Report #10). This handbook is designed primarily for prospective immersion teachers as a pre-service training guide, though it can also serve as a useful resource for immersion program administrators and parents considering immersion for their children. The handbook contains an overview of the immersion model and then discusses in detail the techniques and strategies immersion teachers incorporate into their instruction to make subject matter understandable in the second language. The methodology section of the handbook is a new contribution to our understanding of how immersion teachers go about the business of helping second language learners learn content through the medium of the second language. The handbook also focuses on other important concerns in implenting an immersion program such as enrollment policies and articulation across grades and levels.

Inservice and preservice training provided opportunities for dissemination of information to the field and served as a topic of research. In the study **The Effects of Communicatively Oriented Training and Materials Development and Adaptation on Instructional Practices and Student Foreign Language Learning**, ten workshops on communicatively-oriented teaching were provided to a group of first year Spanish teachers. The goals were to (1) increase the degree of communicative teaching in the classroom, (2) enhance students' foreign language learning, and (3) improve students' atttitudes towards foreign language learning. To ascertain whether these three goals were met, an observation instrument, listening and reading tests, and a language aptitude scale were adapted or developed for data collection.

Analysis of the data showed no significant effect of teacher training on commmunicative teaching or student achievement. It was found, however, that students receiving communicatively-oriented instruction exhibited more positive attitudes than the control group students throughout the year. In addition, very useful information on secondary school language instruction was collected along with assessment instruments and teacher-made communicative materials that will continue to be included in teacher training sessions in other school districts.

Essential to the completion of studies in Task 6 was the creation of several test instruments in the study **Development of Assessment Instruments.** At the same time, the study provided accurate and valid assessment methods that address the needs of three major target audiences: students in immersion programs, students in foreign language in the elementary school (FLES) programs, and students in English as a second language (ESL) programs. Two major tests were developed: The CLEAR Oral

Proficiency Exam (COPE) -- in English and Spanish, and the FLES (Foreign Language in the Elementary School) Test -- in Spanish.

The COPE was developed to provide a measure of immersion students' ability to understand, speak, and be understood by others, with particular emphasis on language in the school context. The test revolves around a role play situation between two students and measures cognitive-academic language skills primarily, and social language skills secondarily. The rating scale assesses fluency, vocabulary, grammar, and comprehension.

The FLES Test is an achievement test for beginning Spanish for students who have participated in a typical FLES program. The test assesses listening and reading skills and includes the areas commonly covered in a FLES program.

The final study in Task 6.6 was undertaken to investigate language learning methods for elementary school children to determine what techniques work best for what children, in what kind of learning situations, and producing what level of skills acquisition. The study **Comparison of FLES and Immersion Programs** had three main goals: to assess the oral proficiency of elementary school students studying Spanish in both traditional (FLES) programs and immersion programs; to collect classroom data and detailed information about student and teacher backgrounds to examine the reasons for the variation found in a previous study by Gray, et al., (1984) in students' proficiency within the schools that have the same type of language program; and to assess the students' attitudes towards the foreign language and culture. Fifth and sixth grade students in six programs across the country were administered the CLEAR Oral Proficiency Exam (COPE), a cultural attitudes questionnnaire, and the CLEAR Spanish FLES Test. Results are currently being analyzed to compare levels of proficiency among students in the various program types. It is anticipated that the results will

provide critical data on within-program variation as well as variation among program types.

From the findings of the national survey to the results of the four individual studies, it is quite apparent that national attention needs to be focused on developing more rigorous foreign language programs, with instruction beginning in the early grades and continuing through high school until fluency is reached. The studies support the notion that the development of a language-competent society can be strengthened by encouraging long-term programs that aim at a high degree of proficiency and by addressing the major obstacles to successful foreign language education in this country: lack of funding, shortage of teachers, inadequate in-service training, and lack of quality materials. It is also felt that U.S. language programs can be greatly strengthened by broadening the usual course offerings to include major world languages such as Russian, Japanese, Chinese, and Arabic. Given the importance of immersion methods and the communicative approach in CLEAR's research results, additional studies should focus on the relationship between the use of these approaches and the enhancement of students' communicative competence.

Project 6.1: National Survey of Elementary and Secondary Foreign Language Programs

Project Director: Rebecca Oxford

Project Co-Director: Nancy Rhodes

Status: Completed

Rationale

The role of foreign language education in our schools has been under close public scrutiny during the last decade. Various education commissions, policy groups, states, and local school districts have recommended ways to enhance the teaching of foreign languages in elementary and secondary schools. A comprehensive, national survey of foreign language programs at elementary and secondary levels was needed in order to gain a greater understanding of the patterns of current teaching practices on a country-wide basis. The growing need for a national survey had been discussed by Eddy and Tucker (1980) and the Association to Cure Monolingualism (1983). Rhodes, Tucker and Clark (1981) specifically suggested that the lack of data on the number and types of foreign language programs in elementary schools was a hindrance to developing a national network of exemplary programs.

Project Goals

The main purpose of the study was to provide a national picture of foreign language education at the elementary and secondary levels in terms of specific catergories, such as public and private schools. The survey questions covered six main areas: background demographics, amount of foreign language instruction, foreign language offerings, foreign language curriculum, teacher qualifications and training, and major problems.

Methodology

Instrumentation. Two similar, four-page survey instruments were developed for elementary and secondary school levels with variations to reflect the two different levels of instruction. Content validity of the survey items was assured through several survey reviews, including a formal clinical trial involving 15 elementary and secondary principals, experienced teachers, and foreign language coordinators.

Sample. The schools included in the study were selected through a stratified random sample from a list of 106,000 public and private schools compiled by Market Data Retrieval in Shelton, Connecticut. The strata included public/private and school level (elementary/junior high senior high/combined).

Data Collection Procedures and Response Rate. The elementary and secondary school foreign language survey was conducted from October 30, 1986 to January 8, 1987. During that time, questionnaires were returned by school principals and language teachers in 1,416 elementary schools and 1,349 secondary schools (a 52% response rate). The respondents represented public and private schools, ranging from nursery school through grade 12, throughout the 50 states and the District of Columbia. Data collection procedures included an advance letter, a survey mailout, a follow-up survey mailout, and a telephone follow-up call.

Results

Whether Schools Teach Foreign Languages. One fifth (22%) of the elementary schools and 87% of the secondary schools reported teaching foreign languages. At the elementary level, the percentage of private schools that taught foreign languages was exactly double that of public schools. At the secondary level, only slightly more private than public schools taught foreign

languages. Many schools not currently teaching foreign languages said they were interested in doing so.

Languages Taught. The top four languages taught in the elementary schools were Spanish, French, Latin and German, offered by 68%, 41%, 12% and 10% of the schools, respectively. Among the secondary schools, the top four languages taught were Spanish (86% of the schools), French (66%), German (28%), and Latin (20%). Private schools at both elementary and secondary levels tended to offer the less commonly taught languages, such as Russian, Italian, Hebrew and Greek.

Program Types. Among the 22% of the elementary schools that offered foreign language study, the vast majority (86%) of them provided programs aimed at various kinds of introductory exposure to the language, while only 14% offered programs having overall proficiency as one of their goals. This means that only 3% of all U.S. elementary schools (14% of 22%) offered programs in which the students were likely to attain some degree of communicative competence in foreign languages (immersion or intensive FLES programs).

Among the 87% of secondary schools that offered foreign languages, 96% of them reported providing standard foreign language programs covering reading, writing, speaking, and listening skills, although the "communicativeness" of these programs was not assessed.

Sequencing. Sequencing of foreign language instruction from elementary to secondary levels was an issue of great concern for the respondents. Thirty-one percent of the elementary schools reported that because there was no planning ahead for their language students, those students who had studied foreign language in elementary schools were placed in Level 1 classes in secondary school along with students who had no prior contact with the language.

Teacher Qualifications. As expected, secondary school foreign language teachers were more highly certified than elementary foreign language teachers. Eighty-one percent of the responding secondary schools said that all their foreign language teachers were certified to teach foreign languages at the secondary level, while only 26% of the responding elementary schools reported that all their foreign language teachers were certified for foreign language teaching at the elementary level. These results reflect the lack of available teacher training and certification programs geared toward the elementary foreign language teacher.

Discussion

It is evident that national attention needs to be focused on developing a more rigorous foreign language program, with instruction beginning in the early grades and continuing through high school until fluency is reached. Efforts to increase language learning in our schools and develop a language-competent society can be strengthened by (1) encouraging the establishment of new programs, particularly those that start in the elementary school and aim at a high degree of proficiency; (2) offering more intensive foreign language programs; (3) improving the sequencing patterns for those schools that already offer language classess in the early grades; (4) addressing the major problems outlined by principals and teachers, including shortage of funding, lack of teachers, lack of quality materials, and inadequate in-service training; and (5) offering more progrmas that teach major world languages such as Russian, Japanese, Chinese and Arabic.

References

Association to Cure Monolingualism. (1983). Survey of foreign language instruction in independent schools. Presented at the Georgetown University Round Table on Languages and Linguistics.

Eddy, P. A., & Tucker, G. R. (1980). Elementary school foreign language instruction in the United States: Innovative approaches for the 1980's. Proposal submitted to the Department of Education, Foreign Language and Area Studies Research.

Rhodes, N. C., Tucker, G. R., & Clark, J. L. D. (1980). Elementary school foreign language instruction in the United States: Innovative approaches for the 1980's. Final report submitted to the Department of Education, Foreign Language and Ares Studies Research, Washington, DC: Center for Applied Linguistics.

I. Definition of Immersion Methodology

Marguerite Ann Snow

Project 6.5

II. Rationale: The growing interest in the immersion model of foreign language education in the United States has raised many questions about teacher preparation and methodology in immersion programs. Research in immersion education for the past twenty years has, for the most part, concentrated on the efficacy of the model by looking at the linguistic, scholastic, and attitudinal consequences of immersion schooling. As the research focus expands to other areas and the practical need to train immersion teachers grows, the teacher variable has become an important area of study.

In the early years of immersion education in both the American and Canadian settings, the prevailing belief was that elementary certification and native or near-native proficiency in the target language were the only criteria in recruiting immersion teachers. In fact, often teachers with no bilingual teaching experience were preferred since it was felt that the assumptions of immersion education were very different from bilingual education methodologies. Immersion teachers were instructed to teach the standard elementary curriculum as they would normally do, albeit in a second language.

Few resources were available to guide incoming teachers new to the immersion instructional setting. Lapkin and Cummins (1984) discussed administrative arrangements and instructional practices in the Canadian French immersion setting. Two manuals published by the British

Columbia Ministry of Education, the Early French Immersion: Administrator's Resource Book (1981) and the Early French Immersion: Teacher's Resource Book (1981) provided guidelines for immersion administrators and teachers. In the American context, Rhodes and Schreibstein (1983) offered tips for new American immersion teachers and suggestions from experienced immersion teachers. In general, however, prospective teachers had limited resources to turn to in their preparation for the immersion classroom.

III. Project 6.5 sought to:

1. determine the basic assumptions and practices of immersion methodology;
2. describe immersion methodology in the form of a handbook for prospective immersion teachers;
3. disseminate the handbook to administrators, program coordinators, and teachers in immersion programs across the United States.

IV. Method. A questionnaire was designed to elicit information about the specific instructional techniques and strategies used by immersion teachers. Teachers were asked to rate the frequency with which they used these strategies in their immersion teaching. The strategies listed were drawn from an extensive review of the second language teaching literature, including ESL, bilingual education, and foreign language teaching. An open-ended section allowed teachers to write in any strategies not contained on the list. Altogether 49 teachers

representing five well-established immersion programs in the United States completed the questionnaire.

V. Results: Immersion teachers reported using a variety of strategies and techniques. The highest rated instructional strategies were: (1) Use of body language; (2) Use of realia, visuals, and manipulatives; (3) Drawing on students' background knowledge to aid comprehension; (4) Review of previously covered material; (5) Building redundancy into lessons; (6) Repetition; and (7) Explicit teacher modeling. Immersion teachers also noted that they have to pay particular attention to vocabulary development, lessons planning, and culture.

VI. Implications: The results of Project 6.5 provide a detailed description of the varied strategies and techniques that immersion teachers incorporate into their instructional repertoire to make subject matter comprehensible. The handbook provides a resource for the pre-service and in-service training of immersion teachers.

References

Early French immersion: Administrator's resource book. (1981). Vancouver, British Colombia: Ministry of Education.

Early French immersion: Teacher's resource book. (1981). Vancouver, British Colombia: Ministry of Education.

Lapkin, S. & Cummins, J. (1984). Canadian French immersion education: Current administrative and instructional practices. In Studies on immersion education: A collection for United States educators

(pp. 87-112). Sacramento, CA: California State Department of Education.

Rhodes, N. (1987). Total and partial immersion language programs in U.S. elementary schools. Washington, DC: Center for Applied Linguistics

Project 6.6: Comparison of FLES and Immerison Programs

Project Director: Nancy Rhodes

Status: In progress

Rationale

Although there has been a dramatic increase in interest in elementary school foreign language programs in this decade, very little empirical evidence has been collected on the merits and limitations of current instructional approaches. Many school principals, teachers, and parents have expressed a keen interest in having evaluations conducted on their programs, but it has been found that few schools have systematic evaluations of their students' foreign language proficiency (Gray, et al. 1984).

The recent study by Gray, et al. provides the first of its kind data comparing three types of foreign language programs currently found in the U.S. The comparisons are based on measured achievement in listening, speaking, reading, and writing in French and Spanish. One of the conclusions of this study was that the instrument used--the only one available, the Modern Language Association (MLA) Cooperative Test--does not adequately provide appropriate and precise data regarding diverse aspects of oral language proficiency.

The need for a more precise instrument to measure language proficiency of elementary school children was addressed in CLEAR Study 6.7, "Development of Assessment Instruments," where the CLEAR Oral Proficiency Exam (COPE) was developed. This current study, then, will take advantage of the newly developed criteria for assessing students' oral proficiency, and will administer the new test at some of the same sites as the original Gray, et al. study for comparative purposes.

Project Goals

There are three main purposes of this study. The primary purpose is to assess the oral proficiency of elementary school students studying Spanish in both traditional (FLES) programs and immersion programs. The second purpose is to collect extensive qualitative classroom data and detailed information about student and teacher backgrounds to examine the reasons for the variation found by Gray et al. (1984) in students' proficiency within the schools that have the same type of language program. The third purpose is to assess the attitudes towards language learning and other cultures of students participating in immersion, FLES, and Foreign Language Experience (FLEX) programs by administering a language and cultural attitudes questionnaire.

Methodology

Sample. Fifth and sixth grade pupils from nine elementary school language programs are included in the sample: three immersion programs, three FLES programs, and three FLEX programs. The immersion program sites selected were schools with students who had studied Spanish for five or more years. The FLEX and FLES schools selected were schools that are known to have "exemplary" programs.

The immersion sites were Milwaukee, WI; Culver City, CA; and Orem, UT. The FLES sites were Glastonbury, CT; Milwaukee, WI; and Springfield, MA. The FLEX sites were Iowa City, IA; Bethel, VT; and Orange County, FL.

Instrumentation. The following instruments were used in the study: (a) the newly developed CLEAR Oral Proficiency Exam (COPE) designed for testing Spanish oral proficiency of fifth and sixth graders (see Project 6.7), (b) a cultural attitudes questionnaire, "What do you think?," adapted from the work of Robert Gardner (1974) and Marguerite Ann Snow (1985), and (c) the FLES Test-

Spanish, developed by CLEAR (see Project 6.7) for students whose exposure to Spanish ranges from a minimum of 30 minutes per week to a maximum of three hours per week.

Data Collection. During the first year of the study, the cultural attitudes questionnaire was developed, pilot tested, and tested for validity and reliability. Site visit schedules were also arranged. Site visits and cultural attitudes questionnaire administration in the FLEX programs took place in the spring of 1988. (The FLEX program students were not administered the COPE test because of the limited goal of this program model.)

The site visits for the FLES and immersion programs are taking place in the fall of 1988. Each school visit will include the administration of the COPE oral interview to pairs of students. The cultural attitudes questionnaire will be given to the class as a whole. Class observations will also be undertaken. In addition, extensive interviews with principals, classroom teachers, resource teachers, paraprofessionals and parents will be conducted. This information will be used to help examine the sources of variation within schools that offer the same type of program.

Results

Results of the COPE proficiency test and FLES test will be analyzed to compare attained level of proficiency among students participating in the various program types. Responses on the attitudes questionnaire will be correlated with the proficiency test results. The information obtained from interviews and classroom observations will be analyzed to help interpret program variation.

Discussion

It is anticipated that the results of this study will provide critical data on within-program variation, through the analysis of the COPE test results along with the ethnographic-type classroom data and detailed information about student and teacher backgrounds.

In addition, it is anticipated that the results of the language and culture attitudes survey will provide insight into the students' cultural awareness, sensitivity to other ethnic groups, and desire to study other languages. Are FLES and foreign language experience (FLEX) programs valuable in their own right for developing these important more broader cultural skills? If a FLES/FLEX exposure has as much (or more) "affective payoff" as an immersion program, this would be important information to consider in connection with the continued offering of such programs.

References

Gardner, R. C., & Smythe, P.C. (1974). National Test Battery Language Research Group. University of Western Ontario.

Gray, T. C., Campbell, R. N., Rhodes, N. C., & Snow, M. A. (1984). Comparative evaluation of elementary school foreign language programs (Final report submitted to the U.S. Department of Education). Washington, DC: Center for Applied Linguistics.

Snow, M. A. (1985). Student questionnaire. Unpublished, University of California, Los Angeles.

Project 6.7: Development of Assessment Instruments and Procedures

Project Director: Charles Stansfield

Co-Director: Nancy Rhodes

Status: Completed

Rationale

The Center for Language Education and Research (CLEAR) studies on foreign language instruction identified as major needs the development of oral proficiency tests in English and Spanish for elementary students and a Spanish test for students in foreign language in the elementary school (FLES) programs. The tests were seen as essential for conducting certain CLEAR studies and at the same time were seen as filling a significant gap in the language assessment field by meeting the needs of a major target audience--those students who begin foreign language study in elementary school.

Project Goals

This project was undertaken to:

(1) assess the language test needs of CLEAR research studies, review available instruments, and identify areas of greatest need for development within CLEAR and in language education at large.

(2) develop and field test assessment instruments to meet these needs.

Needs Assessment

This test development project began with a seminar to discuss the general CLEAR assessment needs within the broad context of Foreign Language and English as a Second Language (ESL) teaching. A systematic needs assessment of all relevant CLEAR studies resulted in identifying a strong need for a Spanish proficiency test in six studies, mainly in upper elementary grades, and for an

ESL test in two studies at various grade levels. We obtained and reviewed all relevant tests in Spanish and ESL related to the target populations. This resulted in a compilation of tests that measured proficiency, achievement, dominance, and other relevant aspects of language performance. The seminar participants concluded that the basic need was for tests in Spanish and ESL that covered cognitive-academic language skills primarily and social language secondarily.

Of all the tests reviewed, the IDEA Proficiency Test (IPT) (1980) came the closest to providing adequate measurement of cognitive-academic language skills in both Spanish and ESL. Therefore, the IPT was chosen as a test to be used for selected CLEAR studies. Another useful test identified was the Woodcock Language Proficiency Battery (1981), especially the subtests of picture vocabulary, analogies, passage comprehension and antonyms/synonyms (all available in Spanish and English and found to be highly reliable and valid). It was agreed that the following tests would be developed in this study to fill gaps in specific areas: (1) The CLEAR Oral Proficiency Exam (COPE) in Spanish and English, suitable for students in 5th and 6th grades, and (2) the FLES Test, a test for assessing listening and reading skills for students in Spanish elementary school FLES programs.

Methodology

The COPE was developed to provide a measure of a language learner's ability to understand, speak, and be understood by others, with particular focus on the school context. The test was developed both in Spanish for fifth and sixth graders who have been studying in a total or partial immersion program, and in English, for fifth and sixth graders who have been in an English as a second language program. The test revolves around a role play

situation between two students and measures cognitive-academic language skills primarily and social language skills secondarily. The rating scale, based on the ACTFL (1986) scale, assesses fluency, vocabulary, grammar, and comprehension.

Both the Spanish and English versions of the COPE test were pilot tested in the spring of 1987 with Spanish immersion and ESL students in Maryland, Virginia and Wisconsin. Substantial revisions were made and clinical testing of the instrument took place during the 1987-88 school year in Washington, DC and Minnesota. To validate the COPE, another oral proficiency test, the IPT was administered for comparative purposes.

The Spanish FLES Test was developed for fifth and sixth graders who have been studying Spanish using a more traditional approach. This is an achievement test for beginning Spanish for students who have participated in a typical FLES program (exposure to Spanish from one to three hours per week over a period of two to six years). No special training is required to administer the test.

The FLES test assesses listening and reading skills and includes the content areas commonly covered in a FLES program. Concepts to be tested were selected by reviewing five commonly used FLES curricula: (1) common greetings and expressions, (2) family relationships, (3) fruits and vegetables, (4) common classroom objects, (5) months and seasons, (6) colors, (7) telling time, (8) numbers, (9) clothing, (10) days of the week, and (11) parts of the body. The resulting items were checked for content validity by specialists in elementary school language programs before being integrated into the overall test structure. The instrument was pilot tested in schools in Maryland, Vermont, and Michigan and appropriate revisions have been made.

Both the COPE and the FLES Test are being used during the 1988-89 school year for CLEAR Project 6.6 to assess the Spanish proficiency of students in immersion, partial immersion and FLES programs.

Results

The COPE was administered to 113 students in partial immersion and content-based FLES programs. Results of the validity testing provided us with assurance that the COPE measures oral proficiency as intended. The Pearson product-moment correlation between the total COPE score and the IPT score for the total sample was .62 ($p<.0001$). Although this was somewhat less than the conventional validity index criterion level (i.e., .75), the correlation was considered "reasonably good" because the IPT is different from the COPE in many respects (e.g., format, content, context). Bearing this in mind, the fact that the COPE had a concurrent validity index of .62 provided us with a fair degree of assurance that the COPE validly measures oral proficiency as intended.

When content-based FLES students (those who receive regular FLES instruction combined with a social studies class taught in Spanish) are considered separately from the partial immersion students, the validity index varied with group membership. For the content-based FLES students, the validity index was .81 ($N=12$, $p<.001$); whereas for the partial immersion students, the validity index was .57 ($N=101$, $p<.0001$). Because of the small sample size of the content-based FLES group, it is difficult to speculate the reason for the difference in the validity indices. A significance test on the difference between the two indices indicates that the difference is not significant at the .05 level ($z=1.40$). This suggests that the COPE may be an equally valid measure of oral proficiency for both content-based FLES and partial immersion students.

The dimensionality of the COPE was assessed by testing whether the four subscales--comprehension, fluency, vocabulary, grammar--represented "psychologically real" entities that comprise general oral language proficiency and yet are empirically separable.

Intercorrelations among the four subscales, measured by Pearson product-moment correlations, clearly indicated that the four subscales are highly intercorrelated. The intercorrelations range from .82 to 1.0 for the content-based FLES students, from .95 to .99 for the partial immersion students, and from .95 to .99 for the total group. This suggests that the four oral proficiency skills measured by the COPE are essentially indistinguishable, measuring one single underlying construct of general oral proficiency.

Field test results of the FLES test show that this test should be used to determine mastery rather than to discriminate between different levels of "proficiency." Thus, the low difficulty level of the listening section, measured by the percentage of correct responses for each item, is not a concern. This result merely indicates than the majority of the examinees were able to answer the test questions correctly. This test seeks to establish a base line of what a 5th or 6th grade FLES student should know. In the case of our field test examinees, all can be said to have "mastered" the basic vocabulary and structures that are generally taught in FLES programs. It should be noted, however, that the overall discriminatory power of the test is good, particularly in the reading section. Item discrimination is computed as the point-biserial correlation between the item score and the test score. Thus, it should be possible to see some distinctions in performance between different types of FLES programs.

Discussion

For future use of the FLES test for research purposes, we recommend that: (1) an audiotape be made for the listening section to standardize test administration, since one does not currently exist, and (2) the test be translated or adapted so that FLES classes in languages other than Spanish can take advantage of the test.

For further research on the COPE, it is suggested that it be used to assess specific content-area knowledge, such as social studies and science, in addition to being used to assess language skills. As the test is currently used, the students' language is rated on comprehension, fluency, vocabulary, and grammar, but the actual content of their discussions is not rated. Through a more specific focus on academic knowledge, test administrators could analyze in detail the language used for the more academically related topics such as using a timeline, using a map to plan a trip, identifying and explaining the use of scientific equipment, and hypothesizing about a scientific experiment.

With this focus, the COPE would provide us with data about the type of language used to describe, hypothesize, and define terms in specific content areas. Much discussion recently has focused on testing language and content and whether we should, or if its even possible to, actually separate the two. The COPE could be used as a tool to explore the possibility of testing both language and content with the same instrument.

References

ACTFL Proficiency Guidelines. (1986). Hastings-on-Hudson, NY: American Council on the Teaching of Foreign Languages.

Dalton, E. F. (1980). IDEA Oral Language Proficiency Test-Spanish. Brea, CA: Ballard & Tighe.

Woodcock, R. W. (1981). Woodcock Language Proficiency Battery. Allen, TX: DLM Teaching Resources.

Project 6.8: The Effects of Communicatively-Oriented Training and Materials Development and Adaptation on Instructional Practices and Student Foreign Language Learning

Project Director: Charles Stansfield

Status: Completed

Rationale

In the last 25 years many factors have resulted in a shift in language education away from language analysis (language as an object of study) and toward language use (language as a process). Researchers have developed theories about the nature of communication which have found wide application. Many leaders in language education today agree that the fundamental objective of language learning is developing the ability to use language in its most meaningful way, that is, to communicate. With this shift in language teaching toward communicative use of language, changes are necessary in program content, instructional materials, and learning activities. Many current methods and techniques have their source in this new approach to language teaching which focuses on communicative competence.

Although the adoption of this new approach is an indication of belief in its effectiveness, little research has been done to document whether communicative instructional methods are superior to more traditional methods in developing communicative competence. According to Richards and Rogers (1986), what is available is a limited number of books and articles on the theory behind communicatively-oriented instruction, but almost nothing has been written on how such theory is reflected in actual classroom practices. Research in foreign language teaching is needed that focuses on the

Communicative Approach in language learning—and the research must show how that approach can be translated into actual instructional objectives, practices, activities, materials, and student behaviors. Also, to our knowledge, no previous study has looked at how communicatively-oriented teaching can be implemented in regular classrooms using specific teacher in-service training and materials adaptation and development, and how both student attitude and communicative competence are affected.

This study, therefore, was designed to examine the degree to which selected, communicatively-oriented instructional techniques drawn from a variety of communicative methods would be implemented in the "traditional" foreign language classroom through in-service training and to examine the effect these specific instructional changes would have on student attitude and communicative competence.

Project Goals

Three main research hypotheses were tested in this study:

1. Communicatively-oriented in-service training and materials development/adaptation will result in a higher degree of communicative teaching in the classroom.

2. Students' foreign language learning will be enhanced through their teacher's use of communicatively-oriented methods and techniques (when students of teachers who have had communicatively-oriented training and materials development/adaptation are compared with students whose teachers have not had such training).

3. Students' attitudes towards foreign language learning will be improved through their teacher's use of communicatively-oriented teaching concepts and techniques.

Methodology

The in-service training consisted of a series of workshops on communicatively-oriented instruction in which a group of teachers discussed methods and techniques associated with communicative language teaching and developed and/or adapted a variety of activities and supplementary materials that could be used in their classrooms. Teachers who had this type of in-service training were compared with teachers who did not have such training, but who were exposed to useful although non-communicatively-oriented in-service training. Teacher behaviors and student attitude and communicative competence were compared across the two groups in order to investigate the effect of training. Participants were teachers of first year Spanish in junior and senior high schools in one school district in the Washington, DC metropolitan area. Instruments used to collect data for this study were as follows:

1. Classroom Observation Instrument. A classroom observation instrument specifically designed to capture differences in the communicative orientation of L2 classrooms was necessary in order to determine the degree to which a classroom was communicatively-oriented and whether it became more communicative throughout the year as a result of teacher training in communicative teaching strategies and adaptation of materials.

2. Modern Language Aptitude Test. The Modern Language Aptitude Test (MLAT) is designed to measure the foreign language aptitude of students and was used as a covariate in the study to control for differences in aptitude between groups.

3. Listening and Reading Tests. Two tests (Spanish 1 Listening and Spanish 1 Reading) were developed to assess student communicative competence.

4. Language Attitude Scale. To measure student attitude and motivation, the CLEAR staff adapted several scales of the Attitude and Motivation Test Battery (AMTB) based on the well-known work of Robert Gardner in Canada (Gardner and Smythe, 1975; Gardner et al., 1979).

The student data (MLAT, Language Attitude Scale, Listening and Reading Tests) were collected by CLEAR staff in conjunction with the teachers. The classroom observation data were collected by CLEAR project staff involved in both the teacher training workshops and student testing. Observations began in October and continued through June.

All data collected were subjected to two types of statistical analysis: preliminary analysis, which provided descriptive statistics of the student and teacher data; and General Linear Model analysis, which provided inferential statistics of the various hypotheses tested.

Results

The results showed no significant effect of teacher training on communicative teaching and on student achievement for either group. However, when the relationship between communicative teaching observed in classes of all teachers across both groups, and student achievement were examined, a slightly positive correlation was found which was significant in the case of the Reading Test. When student attitudes in relation to group affiliation were examined, the students of treatment group teachers (who appeared higher on the communicativeness scale throughout the year) exhibited more positive attitudes than the control group students, even at the end of the year. This seems to suggest that communicatively-oriented instruction may also help foster more positive student attitudes.

Discussion

Statistical analysis of data collected on both teachers and students who participated in our study has indicated that our research hypotheses cannot be confirmed. Such results, however, cannot be considered conclusive without extensive replication through the implementation of similar studies. Future studies are needed to examine the question of what constitutes sufficient in-service training, i.e., at what point of exposure do teacher behaviors change and does student achievement improve. Above all, given the importance of the Communicative Approach, additional studies should focus on the relationship between the use of this approach and the enhancement of students' communicative competence.

Beyond what has been learned in this study, very useful information on secondary school language instruction has been collected along with assessment instruments and teacher-made communicative materials specifically geared to the first year of instruction in Spanish. The teacher-made activities have been and will continue to be included in teacher training sessions in other school districts. In addition, assessment instruments developed or adapted for this study may be useful for other Spanish teachers or foreign language researchers engaged in classroom studies.

References

Gardner, R. C., & Smythe, P. C. (1975). Motivation and second language acquisiton. The Canadian Modern Language Review, 31, 218-230.

Gardner, R. C., Smythe, P. C., & Clement, R. (1979). Intensive second language study in a bicultural milieu: An investigation of attitudes, motivation and language proficiency. Language Learning, 29, 305-320.

Richards, J., & Rogers, T. S. (1986). Approaches and methods in language teaching: A description and analysis. New York: Cambridge University Press.

TASK SEVEN

Task 7 - Language Attrition

The original CLEAR proposal called for studies of all facets of language attrition. These included studies of students who have participated in immersion programs, students who have learned language in a formal language instruction environment, and studies of the loss of mother tongue skills and language shift. Unfortunately, of the six studies originally proposed, only two were included in the funded workplan. The first of these studies, "A Follow-up of Immersion Program Graduates" (Project 7.2), was discontinued after time one or the initial data collection point. Since it was not possible to gather time two data (after a period of attrition), no data on attrition were gathered and no conclusions were reached.

The second attrition study was designed to assess the loss of language skills following conventional academic instruction among a large number of learners. However, despite repeated attempts, it was not possible to identify a large, stable, and typical population of subjects who could be tested one or two years later. Thus, it was decided to conduct a case study of eight college-level learners of German (Project 7.3). It was originally hoped that data could be gathered data over an 18 month period. However, the curtailing of the CLEAR project forced a modification in the design of the study so that data were gathered at the time of completion of instruction and six months later. Data for this study are now being analyzed and results are forthcoming. A status report on the two studies follows.

Project 7.2: Follow-up of Immersion Program Graduates

Marguerite Ann Snow

I. The following research questions were addressed in Project 7.2:

1. What are the linguistic consequences of attrition?
2. What attitudinal factors are predictor variables for second language retention/attrition?
3. What are the formal and informal patterns of students' Spanish language use?
4. What are the attitudes of immersion graduates?

II. Methods: Three groups of students were included in the follow-up study. Group 1 completed the Spanish Immersion Program (SIP) in 1985; Group 2 completed in 1984 and Group 3 in 1983. A test battery was designed to collect data on Spanish language skills, language use, attitudes and motivation, and language aptitude. The battery consisted of the following instruments:

1. The Modern Language Aptitude (MLAT)
2. The Modern Language Association (MLA) Cooperative Test of Spanish, Form LA - Reading and Listening Subtests
3. Attitude/Motivation modeled after the Attitude and Motivation Test Battery (Gardner, Clement, Smythe, & Smythe, 1979) and used in several previous studies with SIP students (cf., Snow, Padilla, & Campbell, 1988)
4. Spanish oral interview

The three groups of subjects were tested upon completing the elementary school SIP. For the purposes of the longitudinal study, students were tested at the end of each school year at Culver City Middle School and Culver City High School. The Spanish interview was conducted by a native Spanish speaker with individual students in a small private room adjacent to their classrooms. The interviews were transcribed after each data collection period by a native Spanish speaker and reviewed for accuracy by a second native speaker.

III. There are no final results of Project 7.2 as the study was discontinued at the end of year three of CLEAR funding. The study was designed as a longitudinal study to examine the retention/loss of skills over a period of five years. The data collected through year 3 of project funding provide a record of the immersion graduates' Spanish receptive skills, their oral language proficiency and an attitude profile, but cannot answer the research questions posed at the inception of the study.

IV. Implications: As stated above, specific implication cannot be drawn as the study was not completed as planned. However, the objectives of the study posited at the outset are still viable research issues constituting an important area for future investigation.

Project 7.3 Extent and Nature of Language Skill Loss following Intensive Training Programs

Charles W. Stansfield

I. Project Goals

The project sought to address the following questions:

1. What is the extent and nature of language skill attained by individuals after a documented period of language instruction?

2. What is the extent and nature of language skill loss when an appreciable amount of time has elapsed since the completion of language instruction?

3. What background variables, including language use experiences, appear to affect language loss?

II. Methodology

This is a qualitative case study designed to investigate loss of language skills for eight Georgetown University students after completion of formal German language instruction (a minimum of four semesters). Data were collected from each student twice, at the point of completion of language study (Time A) and six months later (Time B). At each data collection point, subjects completed a lengthy background and language use questionnaire and participated in an ACTFL Oral Proficiency Interview conducted by Dr. Heidi Byrnes, a professor at Georgetown University and certified ACTFL interviewer. The transcripts and original taped interviews are providing the material for an error-analysis of the spoken language data at Time A and Time B for each subject. Variables relating to both accuracy (such as correct use of case endings) and fluency (discourse features) are being considered. Interpretation of changes in language competence will be made in reference to background and language use data.

III. Results

Forthcoming (February, 1989).

IV. Discussion

Information about the extent and nature of language skill loss following language training programs has significant educational implications. If the degree and nature of language skill loss can be documented, language maintenance curricula as well as self-study programs can be designed which will allow for more effective language skill retention. In terms of both course design and self-study programs, specific forms and functions of language most subject to attrition could be given additional emphasis. In addition, language educators could confidently incorporate specific learning/retention strategies characteristic of good language "retainers" in future language instruction, maintenance or self-study maintenance programs. This type of overt attention to such strategies could improve the retention rates for all learners.

Finally, it would be possible to identify post-instructional language exposure opportunities which are effective in influencing retention of language skills. The results will also have implications for a general theory of language acquisition. It will be important to understand and to document whether the course and nature of language attrition mirrors the developmental sequence of language acquisition.

I. Follow-up of Immersion Program Graduates

Marguerite Ann Snow

Project 7.2

II. Language attrition research is a small, but growing field of inquiry. The major objective of the research agenda is the identification of patterns of and influences on attrition, whether first, second, or foreign language. The focus of research efforts has thus far been two-pronged: (1) What does attrition look like?; and, (2) What are the appropriate methods for finding out what it looks like? Finding answers to these questions has been constrained by a lack of theoretical models and methodological know-how, which is, of course, typical of a developing field of research inquiry. Ultimately, the results of attrition studies will enable us to better understand the theoretical underpinnings of language retention and loss and will also lead to the development of pedagogical techniques and materials to aid in the reacquisition of lost skills.

Project 7.2 sought to contribute to the developing body of knowledge of the processes which underlie language attrition and to consider methodological issues within a particular language learning setting, the immersion model of foreign language education. The study provided a longitudinal follow-up of three groups of Spanish immersion graduates. It focused on the linguistic consequences of attrition with particular attention to loss of receptive skills (listening and reading) since they are more fully acquired by the end of grade 6 than the productive skills.

III. The following research questions were addressed in Project 7.2:

1. What are the linguistic consequences of attrition?
2. What attitudinal factors are predictor variables for second language retention/attrition?
3. What are the students' patterns of Spanish language use both formal and informal?
4. What is the attitudinal pattern of the immersion graduates?

IV. Methods: Three groups of students were included in the follow-up study. Group 1 exited from the Spanish Immersion Program (SIP) in 1985; Group 2 exited in 1984 and Group 3 in 1983. A test battery was designed to collect data on Spanish language skills, language use, attitudes and motivation, and language aptitude. The battery consisted of the following instruments:

1. The Modern Language Aptitude (MLAT)
2. The Modern Language Association (MLA) Cooperative Test of Spanish, Form LA - Reading and Listening Subtests
3. Attitude/Motivation modeled after the Attitude and Motivation Test Battery (Gardner, Clement, Smythe, & Smythe, 1979) and used in several previous studies with SIP students (cf., Snow, Padilla, & Campbell, 1988)
4. Spanish oral interview

The three groups of subjects were tested upon exiting the elementary school SIP. For the purposes of the longitudinal study, students were tested at the end of each school year at Culver City Middle School and Culver City High School. The Spanish interview was

conducted by a native Spanish speaker with individual students in a small private room adjacent to their classrooms. The interviews were transcribed after each data collection period by a native Spanish speaker and reviewed for accuracy by a second native speaker.

V. There are no final results of Project 7.2 as the study was discontinued at the end of year three of CLEAR funding. The study was designed as a longitudinal study to examine the retention/loss of skills over a period of five years. The data collected through year 3 of project funding provide a record of the immersion graduates' Spanish receptive skills, their oral language proficiency and an attitudinal profile, but cannot answer the research questions posed at the inception of the study.

IV. Implications: As stated above, specific implication cannot be drawn as the study was not completed as planned. However, the objectives of the study as posited at the outset are still viable and constitute an important area for future investigation.

References

Gardner, R. C., Clement, R., Smythe, P. C., & Smythe, C. L. (1979). Attitudes and motivation test battery - revised manual. London, Ontario: University of Western Ontario.

Snow, M. A., Padilla, A. M., & Campbell, R. N. (1988). Factors influencing language retention of graduates of a Spanish immersion program. Applied Linguistics, 9(2), 182-197.

TASK EIGHT

Task Eight Summary

Task Introduction

With only rare exception, foreign language education, ESL, and bilingual education have had separate, independent histories in American education. Each is worthy of intense independent attention; however, intuition and a limited amount of recent experiential and experimental evidence suggests that there are possibilities for establishing relationships between and among these existing models that would enhance language acquisition and educational gains for both linguistic minority and linguistic majority students.

Currently, evaluation and research studies suggest that education programs can be designed to simultaneously meet the needs of language minority and majority students by combining the best features of immersion programs with the best features of bilingual education. **Bilingual immersion** is based on the premise that a second language is best acquired by language minority students when their first language is firmly established, and that a second language is best developed by language majority children through immersion in that language. It is felt that the immersion of fluent English proficient students in non-English instruction is beneficial for their acquisition of true communicative proficiency in the second language. Their language skills, meanwhile, develop unimpeded due to the dominance of English in their social/cultural environment. For limited English proficient students, immersion in their native language provides the necessary linguistic foundation for the later acquisition of English and the further development of full proficiency in both languages.

The Center's research agenda for Task 8 has involved several interrelated activities designed to collect additional information about bilingual immersion programs and help in the development of new bilingual immersion programs: (1) a survey of existing bilingual immersion programs throughout the country; (2) assistance in the development of bilingual immersion programs; (3) evaluation of the efficacy of bilingual immersion programs; and, (4) conducting basic research with students participating in bilingual immersion programs to better understand the relationship among a variety of individual, instructional, and community factors in predicting successful academic learning and high levels of dual language proficiency.

Guiding Questions

Questions that were addressed by projects defined by the original goals can be listed as follows:

1. What are the defining characteristics of innovative bilingual immersion programs? (See Reports ER1, ER6, ER8)

2. What features of the immersion model of foreign language education and the bilingual education model are reasonably transferrable to bilingual immersion programs? (See Reports ER1, ER8, Final Report-Snow)

3. What pedagogical strategies are the most prominent among teachers of immersion and bilingual immersion programs? (See Reports ER8, Final Report-Snow)

4. What steps are required to design and implement new bilingual immersion programs? (See Reports ER8, TR9)

5. What evidence is there that linguistic minority students benefit from bilingual immersion programs insofar as opportunities for maintenance and development of their L1 is concerned? (See Reports TR9, TR Draft-Lindholm & Fairchild, Chapter Draft-Lindholm & Padilla)

6. What evidence is there that linguistic minority students benefit from bilingual immersion programs insofar as acquisition of English is concerned? (See Reports TR9, TR Draft-Lindholm & Fairchild)

7. What evidence is there that linguistic majority students benefit from bilingual immersion programs insofar as development of L2 is concerned? (See Reports TR9, TR Draft-Lindholm & Fairchild, Chapter Draft-Lindholm & Padilla)

8. What characteristics of the "good language learner" are relevant to all second language acquisition programs? (See Reports ER13, TR 10)

List of Projects

Task Coordinator: Russell N. Campbell

The following projects were undertaken to provide opportunities for the above questions to be addressed:

1. Project 8.1: Survey of Bilingual Immersion Programs
2. Project 8.2: The "Good Learner" of English
3. Project 8.3.1: Studies with Existing Bilingual Immersion Programs
4. Project 8.3.2: Existing Bilingual Immersion Programs at the Elementary Level
5. Project 8.3.3: Existing Bilingual Immersion Programs at the Secondary Level
6. Project 8.4: Implementation and Evaluation of New Bilingual Immersion Programs

Reports

Project 8.1

ER 8

ER 6

Project 8.2

ER 13

TR 10

Project 8.3.1

ER 1

Final Report: Snow

Project 8.3.2

Chapter: Lindholm & Padilla

Project 8.3.3

TR Draft: Lindholm & Fairchild

Project 8.4

TR 9

Inter-related Projects

Projects in other tasks that have informed task 8 include:

1. Project 3.1, Valadez and Crandall
2. Project 4.2, Christian
3. Project 5.1, Hakuta
4. Project 5.2, C. Snow
5. Project 5.4, Lindholm
6. Project 6.1, Oxford & Rhodes
7. Project 6.5, A. Snow
8. Project 6.6, Rhodes

Major Findings

- Definition of bilingual immersion education. (See Report ER8)
- Identification and description of bilingual immersion preschool through secondary programs throughout the country. (See Reports ER1, ER6, ER8, Final Report-Snow)
- Descriptive information about programmatic and instructional features of one-way immersion and two-way bilingual immersion models of education. (See Reports ER1, ER6, ER8, Final Report-Snow)
- Spanish-speaking bilingual immersion students performed, at the end of six years of instruction, above national norms in Spanish-language math, Spanish-language reading, English-language math, and only slightly-below national norms in English-language reading, with gains in all achievement measures across time, demonstrating the effectiveness of bilingual immersion education for language minority students. (See Report TR Draft-Lindholm & Fairchild)
- English-speaking bilingual immersion students performed, at the end of six years of instruction, above national norms in Spanish-language math, Spanish-language reading, English-language math, and English-language reading, with gains in all achievement measures across time, demonstrating the effectiveness of bilingual immersion education also for language majority students. (See Report TR Draft-Lindholm & Fairchild)
- Spanish-speaking bilingual immersion students, at the end of one year of instruction: (1) performed above norming groups in Spanish-language math and Spanish-language reading; (2) scored

only slightly below average in English-language math and English-language reading, and made significant gains over time; and, (3) made significant gains in both English and Spanish language proficiency. (See Report TR9)

- English-speaking bilingual immersion students, at the end of one year of instruction: (1) performed above norming groups in Spanish-language math and Spanish-language reading; (2) scored slightly below average to average in English-language math and English-language reading, and made significant gains over time; and, (3) made significant gains in Spanish language proficiency. (See Report TR9)
- At the end of one year of bilingual immersion education, both Spanish- and English-speaking students held high perceptions of their academic abilities. (See Report TR9)
- Spanish-speaking secondary students, in a course designed for native Spanish speakers, scored consistently higher than national norms in Spanish speaking, reading, writing, and listening. (See Report Chapter Draft-Lindholm & Padilla)
- English-speaking secondary students enrolled in a partial Spanish immersion program that integrates native English- and Spanish-speaking students obtain consistently higher scores in Spanish reading, writing, listening, and speaking than their peers in traditional Spanish foreign language courses. (See Report Chapter Draft-Lindholm & Padilla)
- Description of study strategies of ESL students associated with higher levels of oral English language proficiency. (See Reports ER13, TR10)

Future Research Efforts

A number of important results were obtained regarding the efficacy of bilingual immersion education for both language minority and language majority students. However, considerably more basic and applied research is required for a better understanding of the efficacy of bilingual immersion for both groups of students.

Applied research similar to the Project 8.1 Survey would be helpful as more programs have been implemented since the survey and programs that were described have matured and are much richer than the current description might suggest. Such a survey could focus on professional development efforts, materials, and evaluative data from existing programs. Evaluative data from different programs is particularly needed because of the different models of bilingual immersion education.

Basic research is needed to address several issues. First, the significance of family/community characteristics such as parental literacy and involvement, and community attitudes toward bilingualism/bilingual education would be helpful in understanding the societal factors that may provide a more positive environment for bilingualism. Second, considerable work is needed on how the support of the school (administrators, teachers) through professional development, materials and curriculum development influences program development and in turn, language proficiency and academic achievement.

A third research issue concerns the significance of student factors that are associated with high levels of academic success in English and Spanish. At the elementary level, how do factors such as

motivation, attitudes toward learning and language, and exposure to L2 influence language proficiency and academic achievement?

A fourth and related research issue concerns the processing of language, the transfer of content across languages, and the importance of bilingual language proficiency in content instruction, particularly L2 content instruction. This issue begs the need for theoretical models that link L1 and L2 processing, language proficiency with content learning, and content learning in L1 with content learning in L2.

I. Survey of Bilingual Immersion Programs

Kathryn J. Lindholm, Project Director

Project 8.1

Currently, evaluation and research studies indicate that education programs can be designed to simultaneously meet the needs of language minority and majority students by combining the best features of immersion programs with the best features of bilingual education programs. Although this approach is not a new concept, as bilingual education programs have typically included English-speaking students, it differs from these earlier attempts and has only been implemented in a few school districts until recently. With more schools becoming interested in bilingual immersion as an approach to providing quality education for all students, there is a need for clarity in what bilingual immersion means, and in the criteria that can enhance bilingual immersion program and help them meet their goals of true bilingual/bicultural/biliterate competence among all participating children. In order to understand how bilingual immersion might best be implemented, the survey was considered an important step in obtaining information and in disseminating information about bilingual immersion programs that are currently being implemented.

Bilingual immersion programs were located through word-of-mouth, responses to announcements in various newsletters, information from state departments of education, and from publications and conference presentations. All programs that offered a language education program for language minority and language majority students that might be a bilingual immersion program were contacted. While most programs had a

contact person who was quite willing to provide information about the program, there were some programs which appeared to fit within the definition of bilingual immersion, but were not included in the data bank because there was no response to any of the phone calls made to the person who was identified by the school or school district as the contact person for the program.

Information about programs was obtained initially through phone conversations with the individual listed as the contact person or with another individual very familiar with the program. A program description was written based on the information collected through the initial contact, and then the program description was sent to the contact person with a letter requesting corrections or additions to be made, if necessary.

The primary aim of the Survey was to identify all preschool through high school educational programs that fit within the definition of bilingual immersion programs. A total of 30 programs were identified around the nation: five preschool, 22 elementary, two middle school, and one high school. Each program was briefly described in a Directory of Bilingual Immersion Programs: Two-Way Bilingual Education for Language Minority and Majority Students. The first section of the Directory discussed the definition of and rationale for bilingual immersion education. The second section provided a profile of each program identified in the survey, with information on its context, contact person, program objectives, recruitment, staff and staff training, instructional design, instructional characteristics, curriculum and materials, and evaluation efforts and outcomes. Finally, the third section highlighted important bilingual immersion

issues, as evidenced in the programs surveyed, such as recruitment efforts, instructional practices, curriculum and materials adaptation and development, professional development and evaluation outcomes.

This directory is important because it is the only publication to provide the rationale for bilingual immersion, and more significantly, to critically review the definitional issues in implementing bilingual immersion education. In addition, the Directory is the only document available that provides information, including contact persons, regarding existing bilingual immersion programs.

As bilingual immersion becomes more popular, it is imperative that the survey be updated with new and previously unlocated bilingual immersion programs. An important focus of such a directory could be on evaluative data from the bilingual immersion programs.

I. The "Good Learner" of English in Two Settings

Mary McGroarty, Project Director

Project 8.2

II. Rationale:

This project was undertaken for two purposes: 1) to determine whether any of the behaviors found to be effective in Project 8.2.1 on foreign language learning would also be useful for students in a second language setting; and 2) to compare results for diverse samples of English language learners with those found for a more homogeneous group of post-graduate students of English in earlier strategy research (Politzer and McGroarty, 1985).

III. Methodology:

Because we had access to several different samples of adult English language learners, two different studies were carried out using the same background and self-report questionnaires. Study #1 compare two groups of high intermediate students (n = 94) taking the same course in two different settings, university and community extension classes. Study #2 provided similar data for intermediate and advanced students (n = 177) from a large adult school program and also included comparisons of results for students from the three largest native language groups involved, Chinese, Spanish, and Japanese. Each study lasted for one ten-week instructional term.

In both studies, students provided background information such as age, educational level, prior English study, and length of residence in the U.S. Participants then completed two questionnaires, one regarding

the strategies used for studying English in the ESL classroom, in interaction outside class, and during individual study, and one regarding attitudes towards the study of second language in general and English in particular. Frequency of strategy use and attitudinal factors derived from the opinion questionnaire were correlated with achievement in ESL as reflected in end-of-course tests of listening, grammar, and reading, and in students' final grades.

V. Results:

Results indicated that, although the patters of correlation varied according to the outcome measures studied, certain strategies such as saying answers to oneself and using English voluntarily in class, using English at a job, getting the gist of a passage before looking up new words, and guessing meanings from actions or context were consistently positive in association with achievement. However, a number of interaction behaviors such as starting conversations simply to practice English and relying on gestures or writing things out to clarify meaning were negatively related to achievement measures, suggesting that both purpose of interaction in English and student proficiency levels figure in the determination of effective learning strategies.

Opinion factors identified in each study were different and demonstrated weaker relationships with achievement. In Study #1, the two factors related to achievement were those representing favorable evaluation of second language learning in general and positive attitudes towards experiences in the ESL classroom. In Study #2 the only factor associated with achievement was that which represented instrumental orientation to the study of English for occupational or

professional purposes. These differences demonstrate that attitudinal characteristics of successful adult ESL students vary according to setting.

V. Discussion:

This project contributes descriptive information valuable in deriving a theoretical model of effective second language learning. It is clear, for example, that these students were successful when using strategies related to both attention to overall meaning and details of form, depending on the task they completed. Thus the project suggests that ESL instructors seek to make their students aware of many types of strategies and help them select those most appropriate to the particular language skill area or mode of communication they are trying to master.

Still unresolved are questions related to how many of the strategies related to oral language use tapped in the questionnaires influence oral proficiency in English; unfortunately, lack of resources to provide for oral language testing for all participants precluded gathering data on this skill area, which is one where further study would be very illuminating. Of additional interest, and importance for both theoretical and practical reasons, is the gathering of information on language learning strategies from students of lower proficiency levels. All participants in Project 8.2 were intermediate or advanced intermediate in skill level. This restriction of range makes the results less representative of the full span of learning strategies and less broadly applicable to the general population studying English as a second language in the U.S. Also, some participants in the current study provided comments suggesting that the learning strategy inventory

used did not capture some strategies related to use of memory in language learning, behaviors which were particularly characteristic of some Asian students. (This finding was similar to that in Politzer and McGroarty, 1985). A future research agenda, then, should include: 1) use of a measure of oral language skills; 2) data collection from students at lower proficiency levels; and 3) modification of the strategy inventory to include a greater variety of learning behaviors in order to provide more comprehensive results.

References:

Politzer, R. L., & McGroarty, M. E. (1985). An exploratory study of learning behaviors and their relationship to gains in linguistic and communicative competence. TESOL Quarterly, 19, 1, 103-123.

I. Studies with Existing Bilingual Immersion Programs

Marguerite Ann Snow, Project Director

Project 8.3.1

II. A 1985 study comparing second language achievement of students enrolled in FLES, partial immersion, and immersion programs found that immersion students significantly outperformed their counterparts in the other two programs on a test of the four skills, listening, reading, speaking, and writing (Campbell, Gray, Rhodes, and Snow, 1985). The study also found significant differences in achievement of immersion students from different immersion sites. This second finding led to an interest in a close examination of the nature of foreign language acquisition in the immersion setting, thus providing the motivation for Project 8.3.1. This study aimed to examine the first language (English) and second language (Spanish) development of immersion and bilingual immersion program participants and to describe more precisely the attitudinal profiles of the students. In addition the programmatic features and instructional characteristics of several variations of the immersion model were investigated in hopes of revealing information which might explain the differential levels of achievement across immersion programs.

III. The study addressed the following research questions:

1. How much time is devoted to the teaching of the L1 and conversely, to the teaching of the L2?
2. What is the ethnic composition of the program participants?

3. How much contact do the students have both in school and out of school with native speakers of Spanish?

4 What is the extent and quality of special program features (e.g., immersion curriculum, materials, articulation between grades, in-service training, resource teachers)?

5. What is the size of the immersion program?

6. How long has the immersion program been in existence?

IV. Methods: The subjects were four classes of sixth grade Spanish immersion students representing four variations of the immersion model. The four sites were Culver City Middle School, Culver City Unified School District, Horton Elementary School, San Diego City Schools, Longfellow Elementary School, San Diego City Schools, and the Title VII Bilingual Demonstration Project, San Diego City Schools. The programs at Culver City Middle School, Horton Elementary, and Longfellow Elementary were designed as foreign language programs for native English-speaking students. The Title VII Bilingual Demonstration Project was established as a two-way bilingual immersion program for both native English speakers and native Spanish-speaking students. Approximately 60% of the students in each class were classified as Limited English Proficient (LEP); 40% were native English speakers.

Data collection was begun in Spring 1985 with administration of the Modern Language Association (MLA) Cooperative Test of Spanish and an attitude questionnaire developed for the project. In addition, site visits were conducted to gain updated information about the

instructional programs and student populations in each of the four sites.

V. The study revealed that five features distinguished the immersion program which produced the highest levels of Spanish and English development: (1) Intensity of L2 instruction (approximately 80% Spanish); (2) Late onset of L1 instruction (grade 4); (3) Total school program as opposed to a Spanish immersion program within a school; (4) Separate teachers for Spanish and English instruction; and, (5) Positive attitudes and language use outside of school.

VI. The results of this study provide program and curriculum designers with an exemplary model of foreign language education. The study provides detailed information about the programmatic and instructional features of both one-way and two-way (bilingual immersion) models of immersion education which can be used by those interested in setting up new programs. The results also provide an explanation for the differential achievement found in the Campbell et al., study which provided the motivation for the study.

Reference

Campbell, R. N., Gray, T. C., Rhodes, N. C., & Snow, M. A. (1985). Foreign language learning in the elementary schools: A comparison of three language programs. Modern Language Journal, 69, 42-54.

I. Existing Bilingual Immersion Programs at the Elementary Level

Kathryn J. Lindholm, Project Director

Project 8.3.2

The major objective of this project was to study the progress of 78 elementary-level language minority and language majority students who participated for five to seven years in a bilingual immersion program. The aims were to examine: (1) the students' language proficiency in English and Spanish and gains over the five- to seven-year period of the program; (2) the students' academic achievement in English and Spanish each year over the five- to seven-year period; and, (3) the impact of changes in instructional design.

This project used existing data from the San Diego City schools as its data base. The sample consisted of 78 students from six schools who had participated in the bilingual immersion program since preschool, kindergarten, or first grade. The database was developed through two Title VII demonstration grants to the school district. The database, developed for evaluation purposes, included school site, grade level at entry, and language proficiency and academic achievement test scores (in both Spanish and English) for each year of participation in the program. The 78 students represented three cohorts who entered the program at different grade levels: 6 FEP and 14 LEP children had participated in the program since preschool, 11 FEP and 12 LEP children since kindergarten, and 15 FEP and 20 LEP children since first grade. The 78 students represented the number of students who completed the program (through grade 6), and who had acceptably small amounts of missing data.

The findings from this project offered support for the potential of bilingual immersion to produce above average achievement, in two languages, in groups of students who differed in their initial language background. Although the LEP students were slightly below the norm for English reading, they were well above the norm in Spanish reading and in English and Spanish math. The FEP students scored in the upper 25% of students in reading and math achievement in English and Spanish. Both groups were making steady progress in math and reading achievement, despite a drop in the percentage of Spanish instruction in grades four through six (from 80% Spanish in grades 2-3 to 50% Spanish in grades 4-6). Also, achievement in one language did not appear to hinder achievement in another language, but instead progress was made in both languages.

The high achievement, relative to national norms, of the language minority students supports the proposition underlying bilingual education that initial instruction in the native language facilitates achievement in English. Similarly, the high achievement of the FEP students, who were immersed in Spanish, demonstrates that the rationale for second-language immersion is also well-grounded. Further, the correspondence between achievement in English and Spanish provides support for the theoretical premise that the acquisition of knowledge in one language paves the way for knowledge acquisition in the second language (Cummins, 1987).

One interesting result was the lack of a cohort effect for students in sixth grade; that is, achievement in reading and math (in Spanish and English) did not vary according to whether the students entered the bilingual immersion program in preschool, kindergarten, or

first grade. Two possible explanations can be offered for this result. Either the sample was too small to detect a significant cohort effect, or it was not important whether students entered a bilingual immersion program in kindergarten or first grade, as they received the same achievement benefits by the end of the sixth grade. However, immersion research indicates that achievement of students in early immersion programs (beginning in early elementary grades) is superior to achievement of students in late immersion.

Although the current evaluation was not a true experiment, and was limited in sample size (especially in the longitudinal analyses), it pointed to trends which were consistent with other evaluation studies. The present study offered comparisons with national normative data derived from school children who were, for the most part, not enrolled in a bilingual immersion program. These results were consistent with studies conducted by the San Diego City Schools involving comparison groups of English speakers enrolled in a typical mainstream program, and of Spanish speakers enrolled in a bilingual education program. In math achievement, reading achievement, and language proficiency assessments, the bilingual immersion FEP and LEP students significantly outperformed their non-bilingual immersion peers who were enrolled in programs that the bilingual immersion students would have entered had they not been in the bilingual immersion programs (see Lindholm, 1987). Further, the results for the FEP students were similar to those reported for English-speaking students enrolled in Spanish immersion programs in the United States (Campbell, 1984; Genesee, 1985).

In another sense, these findings may be considered quite impressive. For native Spanish speaking students, national trends have

pointed to their severe academic underachievement, relative to national norms, on measures of reading and writing proficiency (see Hakuta & Gould, 1987; Prewitt Diaz, 1981). In this project, native Spanish speaking students were performing above national norms in Spanish-language math, Spanish-language reading, and English-language math. In English-language reading, they averaged only slightly below national norms. More importantly, all students made gains on the national norms, on all achievement measures, thus reversing the national trends of increasing between-group achievement disparities at higher grade levels.

More longitudinal research is needed to clarify the factors that promote high academic achievement among bilingual immersion students. For example, data on home characteristics, particularly parental literacy and involvement, and student characteristics such as motivation, would be particularly helpful. Finally, longitudinal data that follows these students through secondary school and examines language proficiency after graduation from the program would be very informative in understanding the effectiveness of the bilingual immersion program in promoting bilingualism.

I. Existing Bilingual Immersion Programs at the Secondary Level

Kathryn J. Lindholm and Eduardo C. Cascallar, Project Directors
Project 8.3.3

II. Rationale of Project:

In a recent national survey of foreign language programs, Rhodes and Oxford (1988) reported that 95% of the surveyed 1,349 secondary schools provided foreign language instruction, with Spanish as the most frequently taught foreign language (86% of secondary schools with a foreign language offered Spanish). In these schools, 96% provided standard foreign language classes, 20% offered exploratory courses, 2% taught subject matter (e.g., U.S. History) in the foreign language, and 4% provided language for native speaker courses. What these statistics demonstrate is that foreign language instruction is frequently taught in secondary schools, but most schools rely on the standard foreign language approach, with only a few schools offering special types of programs to further stimulate foreign language learning on the part of their students.

We have also learned that foreign language programs can be designed to simultaneously meet the needs of both English speakers learning Spanish as a second language, and Spanish speakers learning English and developing their Spanish. Such programs could provide second language (L2) students with greater second language proficiency than that achieved by students in traditional foreign language courses and could enhance the first language (L1) literacy and communication skills of non-native English speakers.

III. Statement of Questions Addressed:

This study involves a project in a bilingual partial immersion program and examines the Spanish reading, writing, listening and speaking proficiency of students enrolled in the different types of Spanish programs.

IV. Methodology:

Testing Procedures and Instruments

Each student was tested in his/her language class. Students were administered the Modern Language Association (MLA) Cooperative Foreign Language Test, which was designed to test the four language skills--listening, speaking, reading, and writing -- in secondary schools and colleges. Also, the ACTFL Proficiency guidelines were used to rate the students' speaking proficiency in Spanish. A background questionnaire was also given to the students. This questionnaire contained questions that probed the students' Spanish language exposure and Spanish language use, attitudes toward the Spanish language and the Hispanic culture, motivation to use Spanish, and self-rated ability to use Spanish along six dimensions.

Description of Students

A total of 545 students participated in the data collection. Of these, 53 were in the Spanish for Native Speakers (SNS) track, 79 were in the Intensive Spanish as a Second Language (ISSL) track, and 391 were in the traditional Spanish (SPANISH) track. In the SNS track, there were 21 first-year, 15 second-year, and 17 third-year students. Of the ISSL students, 35 were in their first year, 30 were in their second year, and 14 were in their third year of Spanish. Finally, 220

of the SPAN students were first-year students, 111 were second-year students, and 69 were third-year students. A total of 22 students were in their fourth year of study. This one classroom of students was a combination of SPAN, ISSL and SNS students. In general, the SNS students had the highest exposure to and use of Spanish followed by the ISSL students and then the SPANISH students.

V. Results:

Results showed that the type of Spanish course significantly influenced the level of Spanish proficiency that the students obtained. All groups performed well on the tests, scoring higher than the norming samples. In addition, the students' MLA scores increased from year 1 to year 2 to year 3, with significant increases from year 1 to year 3.

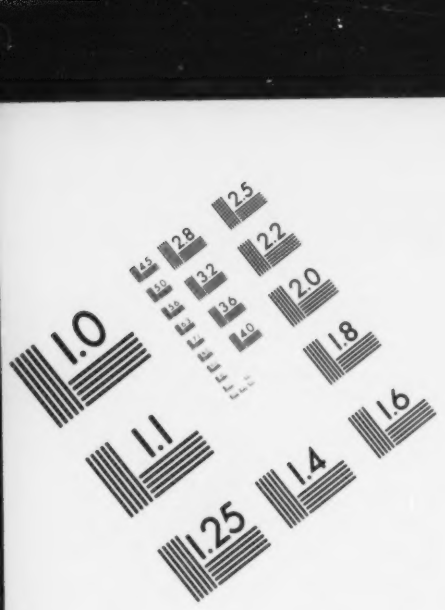
On all of the tests and in the years studied, the SNS students outperformed the ISSL students who obtained higher scores than the SPAN students. Although the difference in scores between the ISSL and SPAN students was not always significant, but ISSL students always outscored the SPAN students. These results are important because they provide support for the ISSL model in promoting higher levels of Spanish proficiency on the part of the Spanish foreign language students.

However, an important point occurs with respect to interpreting the higher scores of the ISSL over SPAN students. At entry into the program, the two groups of students had nearly equivalent exposure to Spanish in the home environment, with about 11.0% of each group having exposure to at least some Spanish in their home. Only slightly more ISSL students (5.0%) than SPAN students (3.3%) learned Spanish as

their first language. Furthermore, on a measure of attitudes and motivation related to the Spanish language and Spanish speakers, the two groups did not differ. However, the groups differed significantly in their motivation behaviors, where three times as many ISSL students and SPAN students watched Spanish TV, listened to Spanish radio, and read books and magazines in Spanish. Thus, the ISSL students were either more motivated to study Spanish and thus enrolled in a more intensive Spanish course, or they became more motivated as a result of the activities they engaged in as a result of their Spanish course. In either event, the present findings should be interpreted with caution. Analyses of the entry level SPAN 1 and ISSL 1 students on the MLA listening test demonstrated that the students began the program with the same language comprehension scores, possibly indicating that the ISSL students became more motivated as a result of the program.

The consistently higher scores of the SNS students is also noteworthy. Although SNS students would be expected to have higher listening comprehension and speaking scores than their non-native Spanish-speaking classmates, the ability of these students to use their Spanish oral skills in developing their written skills is evident. That is, the goal of the SNS course is to promote literacy development in Spanish. The results clearly show that the SNS students were able to develop literacy skills in Spanish.

The importance of these results is that foreign language courses can be tailored to the needs of students in ways that promote greater language proficiency. Providing native Spanish speakers with the opportunity to develop their literacy skills acknowledges the oral proficiency that they currently possess and builds on that proficiency



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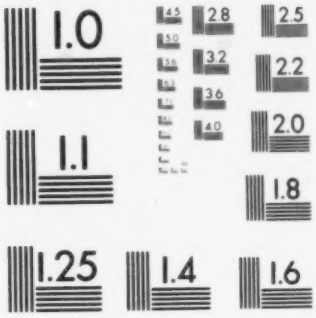

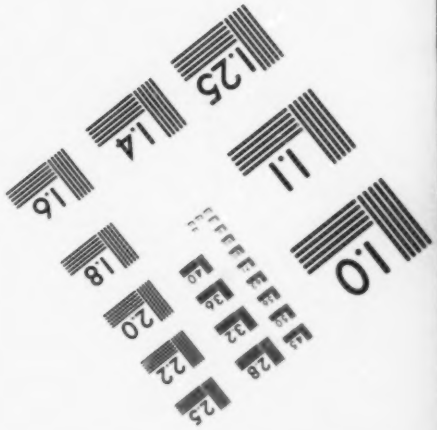

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in the written domain, yielding high proficiency scores in other domains. In addition, offering an intensive foreign language course which provides for the acquisition of content knowledge in the foreign language also stimulates students to learn the language and motivates them to partake in behaviors that serve to further promote their language learning.

Further information is needed about how to best integrate the students (ISSL and SNS) for content instruction, what subject areas should be taught in the foreign language, and on the role of motivation and attitudes in a two-way program at the secondary level.

I. Implementation and Evaluation of New Bilingual Immersion Programs

Kathryn J. Lindholm and Jose L. Galvan, Project Directors

Project 8.4

II. Rationale for Project

Bilingual immersion education combines the most significant features of bilingual education (for language minority students) and immersion education (for language majority students). Academic and language arts instruction is provided to students through two languages, taught in separate class periods. For language minority (i.e., non-English-dominant) students, most of their academic instruction is presented through their first language, Spanish, and they receive English language arts and portions of their academic instruction in English. For language majority (i.e., English-dominant) students, most of their academic instruction is through their second language, Spanish, and some in English, and their training in language arts is conducted in separate English and Spanish class periods.

Bilingual immersion education therefore encompasses two key features: (1) the program essentially involves some form of dual language immersion, with periods of instruction transpiring in one language only; and (2) both English-dominant and non-English-dominant speakers are participants (ideally in balanced numbers). These programs, therefore, attempt to develop true bilingual academic competence in English and another language for both groups of participating students.

This project, then, sought to assist in the implementation and to conduct the subsequent evaluation of a bilingual immersion program at Edison Elementary School in Santa Monica, California. CLEAR's objective has been to work with Edison School to study and help improve their program in language education. This purpose was accomplished through student assessment, classroom observation, and professional development activities.

III. Statement of Questions Addressed

The major research questions sought to determine: (1) the levels of first and second language proficiency and whether there were gains in first and second language proficiency over the year; (2) the levels of math and reading achievement in Spanish and English and whether there were achievement differences related to the language background of the students; (3) the levels of students' perceived academic, peer, physical and mother-child relationship competencies; and (4) attitudes toward the bilingual immersion program among the parents and staff.

IV. Methodology

A total of 112 children, 58 at the kindergarten and 54 at the first-grade level, participated in the first year of the study. For the second year, (#) additional children entered the kindergarten level, and (#) children entered in the 3rd year. Only the first year's results are available at this time. The Year 2 evaluation is in progress. The project is now in Year 3, with data collection still underway.

For year 1, data were gathered on English and Spanish proficiency

with pre- and post-test measures; English and Spanish achievement, with pre- and post-test measures in Spanish; and perceived competence. In addition, the data collection included a parent questionnaire and a bilingual immersion staff questionnaire. Also, 20 kindergarten and 19 first-grade students who were not enrolled in the bilingual immersion program were tested using the English achievement test.

V. Results

Several important points should be made about the results that have implications for the bilingual immersion model. First, the Spanish speakers at both grade levels made highly significant gains in English and the English speakers demonstrated some gain in English proficiency. Thus, despite the small amount of English instruction, most students were able to make gains in English language proficiency. Second, all students made gains in Spanish proficiency and the gains were highly significant for the Spanish-speaking kindergartners. These are important results because they demonstrate that the bilingual immersion model's assumptions related to language development were accurate; that is, Spanish speakers increased their level of Spanish proficiency and began to develop some proficiency in English, and English speakers did not lose their English proficiency while acquiring Spanish proficiency skills.

A second set of important points concerns the achievement performance of the students. First, the English-speaking students acquired enough content after only one year of instruction through Spanish to be able to score average to above average in a test normed for native Spanish speakers. Second, the Spanish speakers performed

from average to above average on the Spanish achievement test, demonstrating a good level of performance for these students when tested in their native language. Third, the English-speaking kindergartners and the Spanish-speaking first graders scored average to only slightly below average in English reading and math; and the English-speaking first graders scored average to above average in reading, language, and math. The fact that these students were able to score this high in English reading and math, despite having received their instruction in Spanish, demonstrates that the students were acquiring the math concepts in Spanish, and they were able to apply these concepts when tested in English. Thus, the achievement results also validate the achievement assumptions underlying the bilingual immersion model in that the model assumes that content that is learned in Spanish will be available in English as well. The fact that the students were able to score as well as they did demonstrates that the concepts were available to them in both languages.

The students' perceived competence ratings were high in each of four domains (academic, peer, physical, and mother-child relationship); and attitudes toward the bilingual immersion program were generally positive from the parents and teachers.

The findings from Edison were comparable to the results reported by the San Diego City Schools (Lindholm, 1987a; ESEA Title VII Bilingual Demonstration Project, 1982) and three other bilingual immersion programs in California (Lindholm, 1987b). The consistency of the findings across other school sites also adds validity to the achievement and language assumptions underlying the bilingual immersion model.

Future research should consider the instructional elements that are related to high levels of language proficiency and academic achievement, to the levels of language proficiency necessary for successful academic achievement, and to better understanding the role of transfer of content across languages for bilingual immersion students. In addition, comparative research on different models of bilingual immersion would be particularly valuable; for example, programs that utilize 50% Spanish/50% English across all grade levels as compared to programs with graduated mixtures of English and Spanish that begin with 80-90% Spanish instruction.

END

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